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TEACHER'S MANUAL FOR DOUBLE-BASE TRANSFORMATIONS--LANGUAGE CURRICULUM III.

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A MANUAL FOR TEACHING DOUBLE-BASE TRANSFORMATIONS WAS PREPARED FOR TEACHERS IN THE EIGHTH-GRADE LANGUAGE CURRICULUM. BACKGROUND INFORMATION WAS PRESENTED WITH SYMBOLS OF LINGUISTICS IN DISCUSSIONS OF CONJUNCTIVE TRANSFORMATIONS (SENTENCE, SUBJECT AND VERB CONJUNCTIONS). APPROPRIATE STUDENT EXERCISES WITH SUGGESTIONS FOR USING THEM WERE DISCUSSED WITH DIAGRAMED SOLUTIONS. EMBEDDING TRANSFORMATIONS (USING CONJUNCTIONS TO EMBED ONE SENTENCE IN ANOTHER) WERE ALSO TREATED. EMBEDDING TRANSFORMATIONS INTRODUCED WERE THOSE WHICH ACCOUNT FOR THE USE OF ADJECTIVES BEFORE NOUNS AND THOSE WHICH ACCOUNT FOR POSSESSIVE CONSTRUCTIONS. AN ACCOMPANYING MANUAL WAS PREPARED FOR STUDENT USE AS A STUDY GUIDE (ED 010 155). (WN)

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OREGON CURRICULUM STUDY CENTER

TEACHER'S MANUAL
for
DOUBLE BASE TRANSFORMATIONS

Language Curriculum II

The project reported herein was supported through the Cooperative Research Program of the Office of Education, U. S. Department of Health, Education and Welfare.

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CONJUNCTIVE TRANSFORMATIONS

Sentence Conjunctions are accomplished by an unrestricted transformation. Apparently any two sentences can be joined by the Sentence Conjunctions as stated in the Student Version. This however is not true of the other kinds of conjuction transformations. Making explicit the constraints on the various other conjunction rules will probably be the teacher's main concern in this unit.

The Subject Conjunction is restricted in the following way: the consumer and the source may differ only in their subject NP's; all other elements in each sentence must be precisely the same.

Verb Conjunctions, like the noun conjunctions we have just discussed and the various other conjunctions we shall take up in this unit, are the results of specific applications of the very general conjunction rule formulated by A. N. Chomsky. In prose paraphrase that rule can be stated as follows:

If there are two sentences which differ only in one constituent, and that constituent is of the same type in each sentence, there is a third sentence made up of the common part of the two original sentences and the differing parts joined by and.

In symbols $\left.\begin{matrix}\ldots X \ldots \\ \ldots Y \ldots\end{matrix}\right\} \Rightarrow \ldots X + \text{and} + Y \ldots$ where the context of Y is identical to that of X and X and Y are constituents of the same type. (The dots stand for the remainder of a full sentence.)

This rule, like most others in a natural language, must be qualified for certain cases. We will have occasion to mention at least one qualification later in this unit. Before going on to the various applications of this rule to parts of the VP, let's look at how it actually applies to the NP. Take the following sentences:

(1) Joe went home
(2) Sam went home

Joe in (1) is our X; Sam is our Y. The context of our X and our Y is identical and does comprise the remainder of a full sentence. Hence, all our conditions are met and the general rule above yields

(3) Joe and Sam went home

from (1) and (2).

Notice a very important characteristic of the general conjunction rule (GCR):

(4) The little boys went home
(5) The little girls went home

are related to

(6) The little boys and girls went home

Notice that in (6) not the entire NP of (5) was added to that of (4), but only that part of it which was different. In other words, X in this case

was boys in (4); Y was girls in (5). All the conditions are met for the application of GCR because X and Y are constituents of the same type; that is, they have the same kind of derivation: both of them are N + plur derived from N + N°, and beyond that from NP. The context of X is identical to that of Y, and comprises the remainder of a full sentence.

GCR applies to the VP or to one of its parts in very much the same way it applies to the NP or to one of its parts. The general rule for conjoining whole verb phrases found on p. 13 of the student's version of the unit is then simply the description of one of the particular applications of GCR, as are all the other rules in the unit. These subrules have been introduced for the purpose of step-by-step teaching. You should feel it incumbent to explain at the end of the unit that one rule, GCR, covers all the individual cases mentioned in the breakdown of the unit.

In deriving the sentence

(7) Bozo ran and kicked the ball

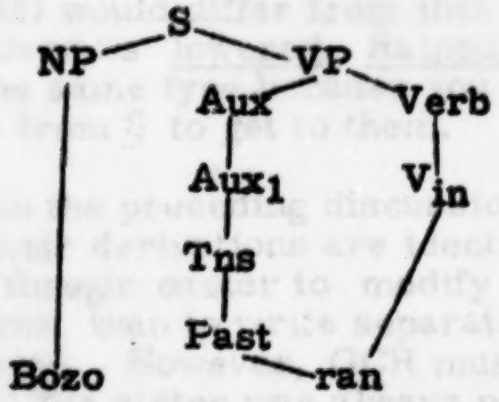
from

(8) Bozo ran

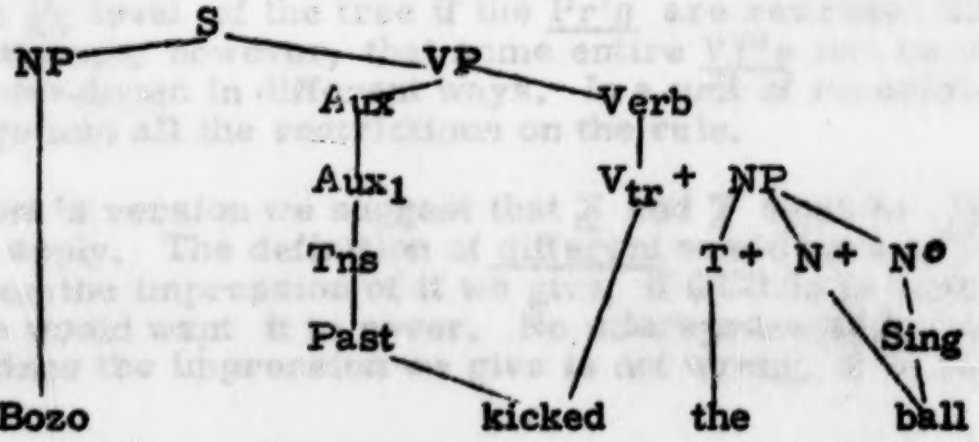
(9) Bozo kicked the ball

GCR applies to the entire VP of each sentence, since the constituents conjoined are of the same type only at the VP level in the trees for (8) and (9):

Tree of (8)



Tree of (9)



Below the VP level the trees above are quite different, but at that level they are the same. VP in (8) has the same relation to S as does VP in (9); they are constituents of the same type. Since these two sentences meet the other conditions for the application of GCR, that rule will

produce (7) from them. This is an instance described by the subrule on p. 13.

In deriving the sentence

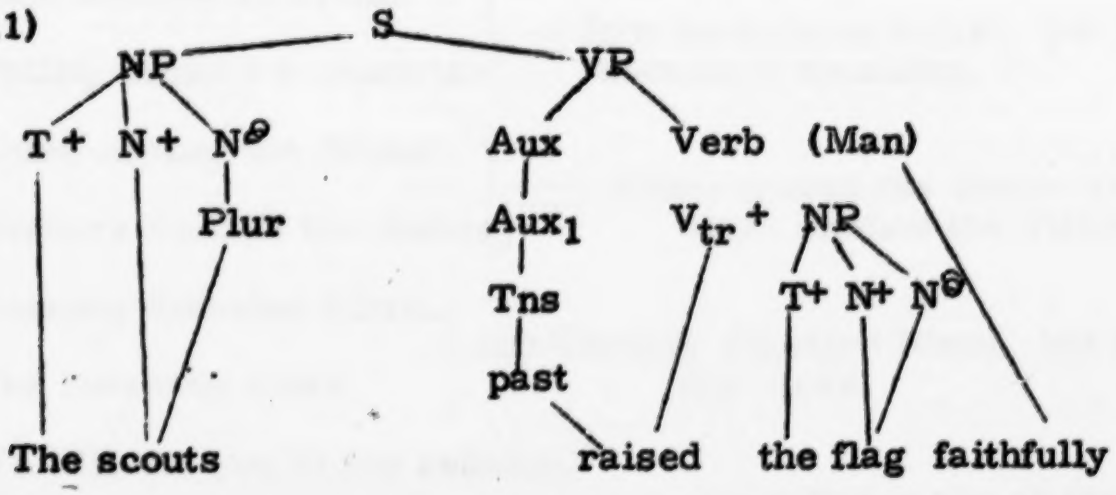
(10) The scouts raised and lowered the flag faithfully.

from

(11) The scouts raised the flag faithfully.
(12) The scouts lowered the flag faithfully.

the constituents joined are of the same type at a much lower point in their trees.

Tree of (11)



The tree of (12) would differ from that of (11) only in that past + V_{tr} would be realized as lowered. Raised and lowered then are constituents of the same type because you would follow the same branches down the tree from S to get to them.

It is implied in the preceding discussion that any two constituents can be conjoined if their derivations are identical. This seems to be true generally. It is thought easier to modify this very general rule to exclude just a few cases, than to write separate rules for all the disparate cases this rule covers. However, GCR must be blocked in some cases.

(13) His sister was always pretty and a nurse.

is ungrammatical. This points up the fact that conjunctions cannot be made at the Pr level of the tree if the Pr's are rewritten differently. We have just seen, however, that some entire VP's can be joined even if they are developed in different ways. In a unit of reasonable proportions we cannot go into all the restrictions on the rule.

In the student's version we suggest that X and Y must be different for GCR to apply. The definition of different would have to be a bit different fromthe impression of it we give, if GCR is to apply to a number of cases we would want it to cover. No misrepresentation is involved however, since the impression we give is not wrong, it is simply lacking in detail.

Exercise 1: Page 2

1. I called Mary
   She came home quickly. $\Rightarrow$ I called Mary and she came home quickly.

2. Linda whispered in class
   The teacher scolded her. ⇒ Linda whispered in class and the teacher scolded her.

#3. The car shot forward
   Hank stepped on the starter. ⇒ The car shot forward for Hank stepped on the starter. #(It is possible to use various coordinating conjunctions.)

4. John became an artist.
   Phillip became a musician ⇒ John became an artist, but Phillip became a musician.

5. Helen cooked the dinner.
   Barbara washed the dishes ⇒ Helen cooked the dinner and Barbara washed the dishes.

6. Kennedy defeated Nixon.
   The vote was close. ⇒ Kennedy defeated Nixon, but the vote was close.

7. We will see you at the reunion.
   We will see you at the dinner. ⇒ We will see you at the reunion or we will see you at the dinner.

3. Arthur had weighed seventy pounds.
   Bill had weighed eighty pounds. ⇒ Arthur had weighed seventy pounds and Bill had weighed eighty pounds.

9. The wind came up.
   We took the kites to the hill quickly. ⇒ The wind came up, so we took the kites to the hill quickly.

10. The dance has been successful.
    We should have another next year. ⇒ The dance has been successful, so we should have another next year.

11. The house was shaking
    ..
    We ran outside. ⇒ The house was shaking, so we ran outside.

Perhaps this would be a good place to discuss punctuation before coordinating conjunctions. (This is included in the usage manual.)

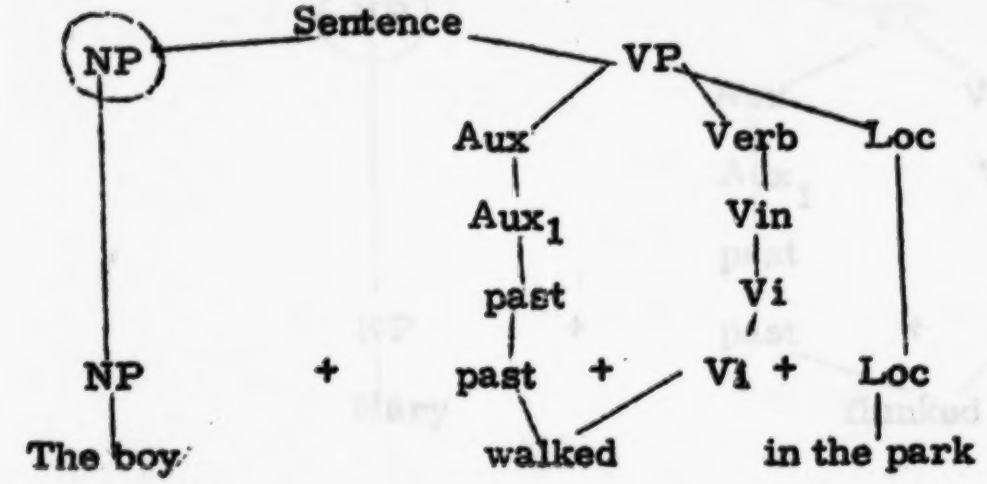
Page 3
Answers to questions in the text:
The sentences do not have the same kinds of verbs. There is a Be in the first sentence of 10 and in the second one of 6. There are linking verbs in 4. There are transitive verbs in the first sentence of 1, the second of 2, both sentences of 5, the first of 6, both of 7, the second of 9. There are mid verbs in both sentences of 8 and the second of 10. And

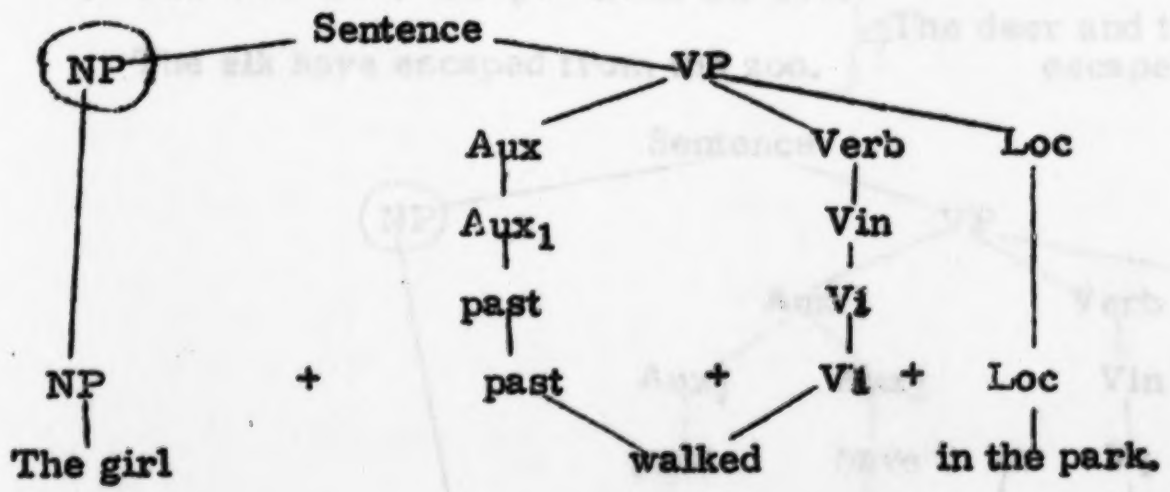
there are intransitive verbs in the second of 1, the first of 2, both of 3, the first of 9. This point does not need to be labored but the students should see that in this kind of conjunction it doesn't matter what kind of sentences are involved. It does of course matter rhetorically.

Exercise 2: Page 5

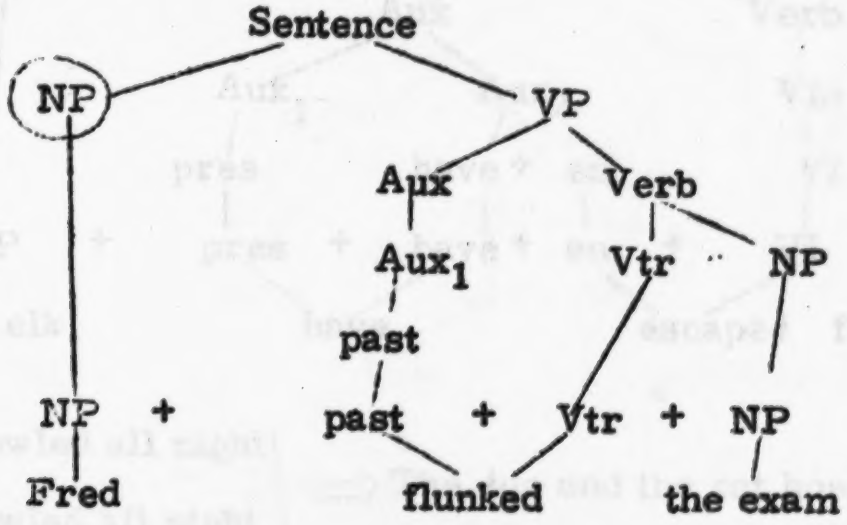
The aim of this exercise is to point up that as long as two sentences are exactly the same except for the subject NP's they can be combined into a sentence with a compound subject simply by joining the two subjects with a conjunction. It does not matter what is in the rest of the sentence as long as the elements in question derive from the same point in the diagram. Number 5, of course, will offer you an opportunity to discuss usage -- a compound subject joined by and requires a plural form of the verb. This will not be a problem in the diagram but will in writing the transformed sentence. The student can be referred to the Usage Manual (AGREEMENT) and might perhaps want to think of other examples.

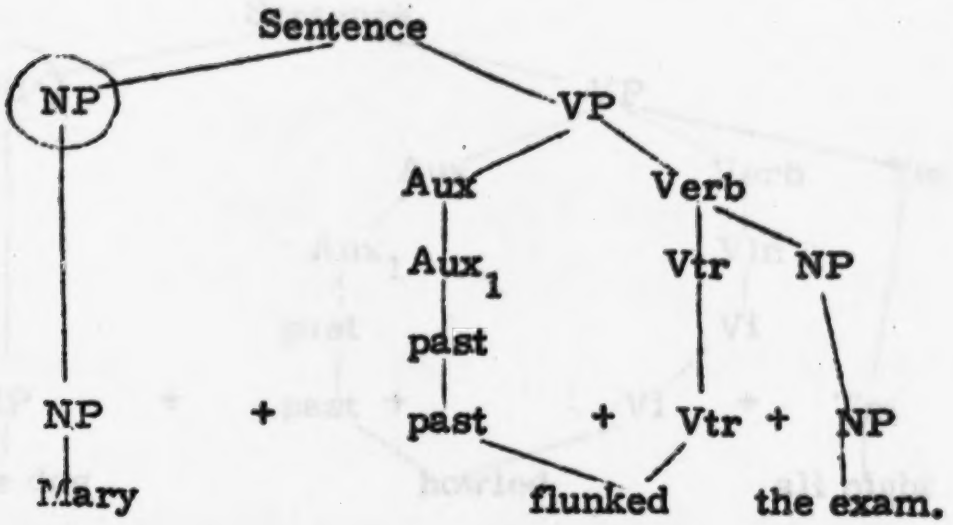
1. The boy walked in the park.
   The girl walked in the park. } The boy and the girl walked in the park.



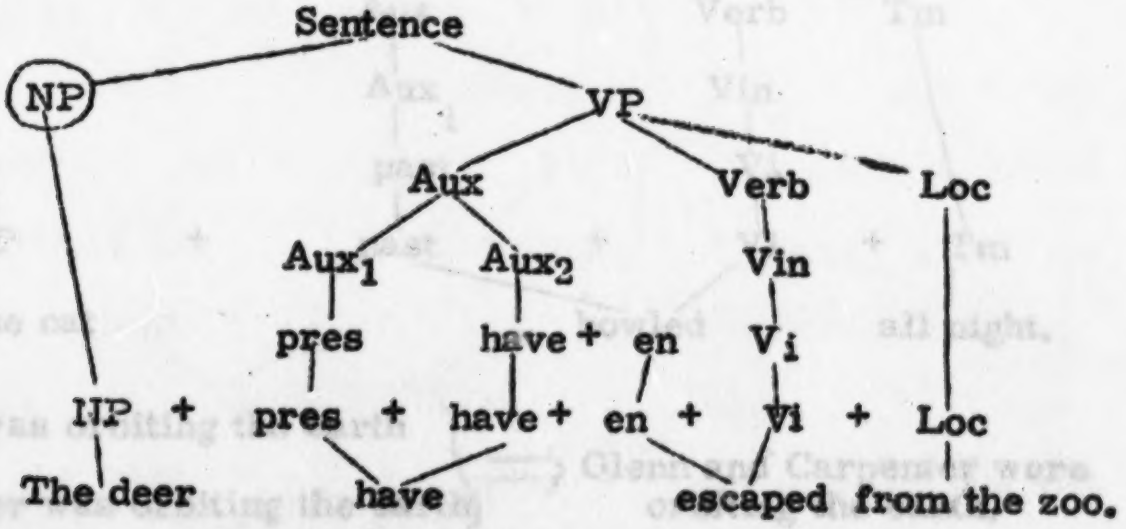


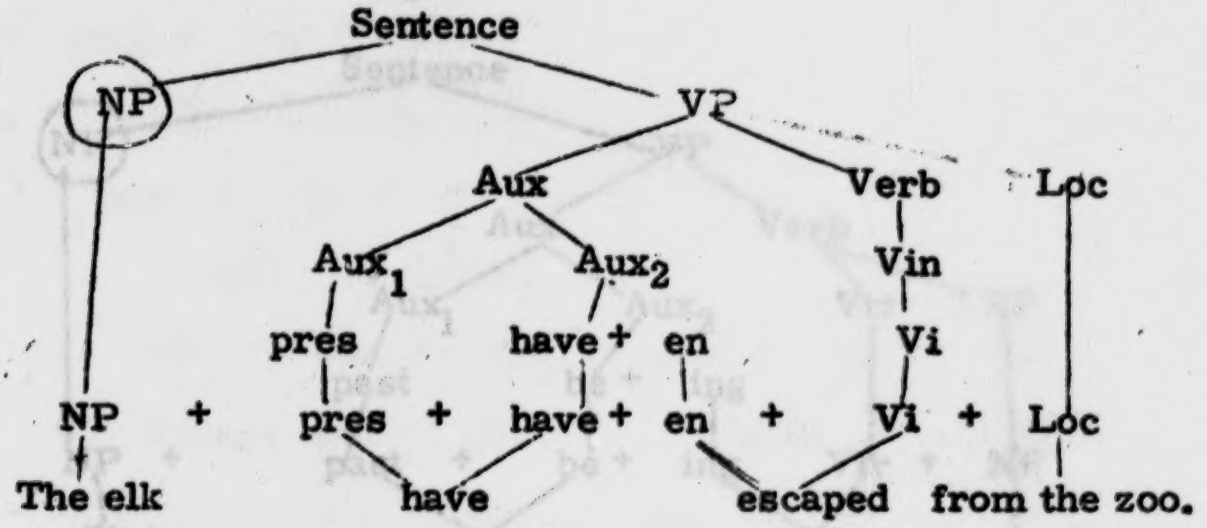
2. Fred flunked the exam
   Mary flunked the exam
   $\Longrightarrow$ Fred and Mary flunked the exam.



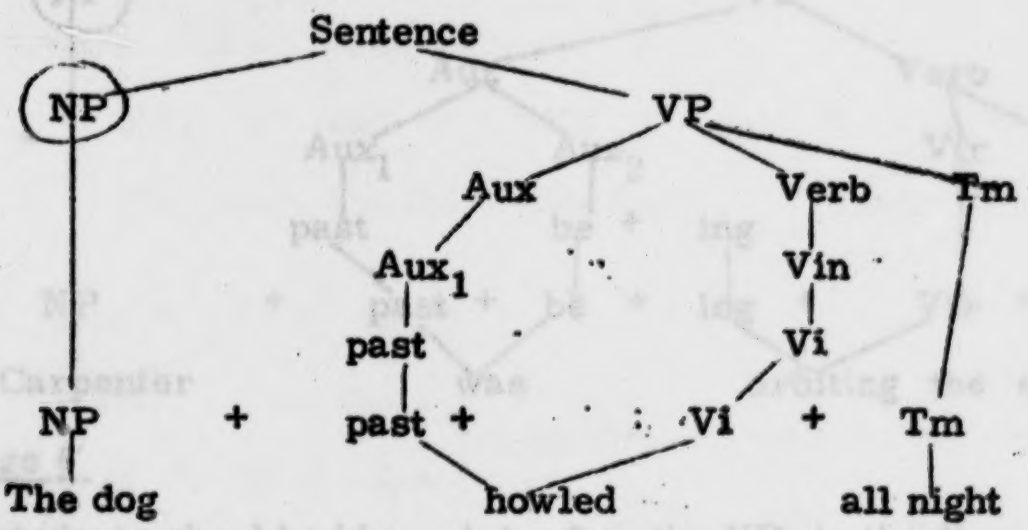


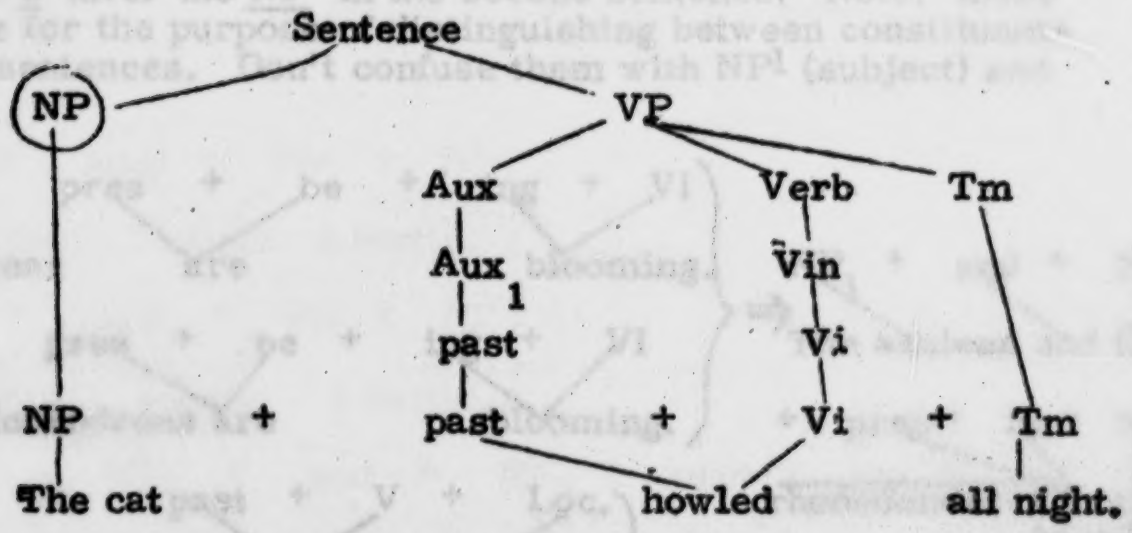
3. The deer have escaped from the zoo.
   The elk have escaped from the zoo.
   $\Rightarrow$ The deer and the elk have escaped from the zoo.



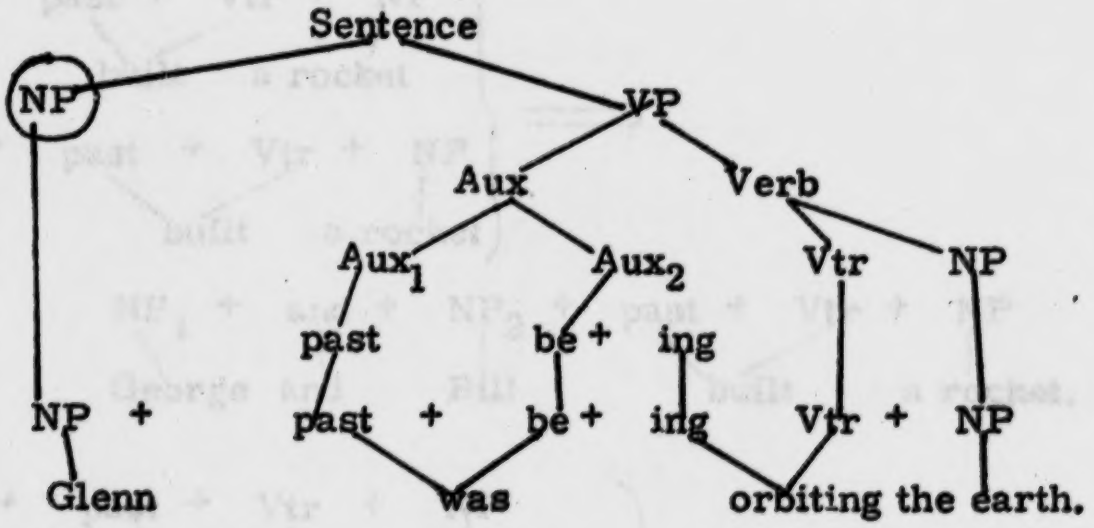


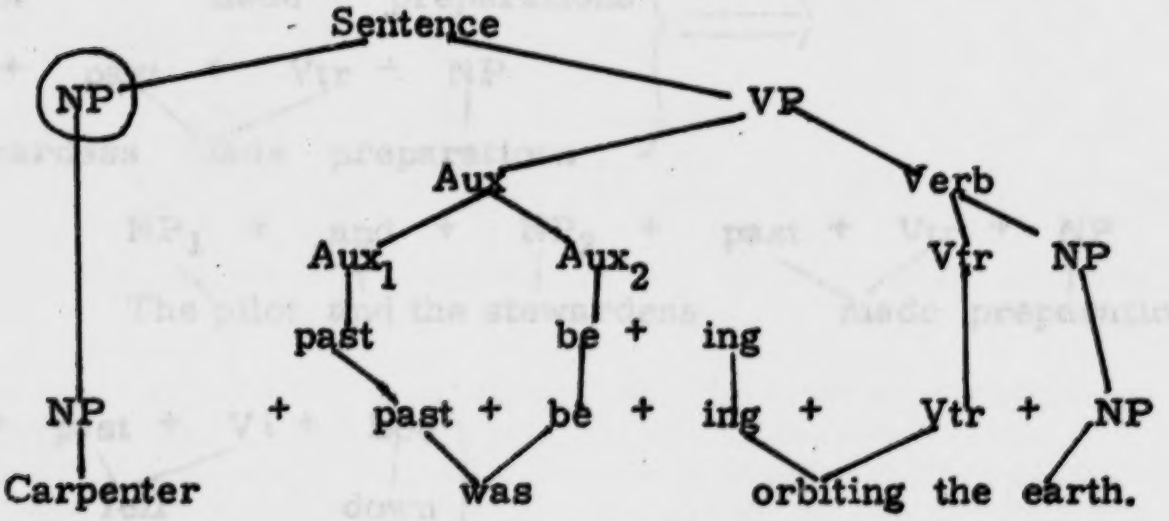
4. The dog howled all night
   The cat howled all night
   ⟹ The dog and the cat howled all night.





#5. Glenn was orbiting the earth
    Carpenter was orbiting the earth
    ⟹ Glenn and Carpenter were orbiting the earth.





Exercise 3: Page 6

In the example students should add a sub 1 after the NP in the first sentence and sub 2 after the NP in the second sentence. Note: these sub numbers are for the purpose of distinguishing between constituents of two different sentences. Don't confuse them with NP^1 (subject) and NP^2 (object)

A. 1. NP_1 + pres + be + ing + VI

The azaleas are blooming.

NP_2 + pres + be + ing + VI

The rhodedendrons are blooming.

$\Rightarrow$ NP_1 + and + NP_2

The azaleas and the rhodedendrons are + pres + be + ing + VI

blooming

2. NP_1 + past + V + Loc.

The calico cat sat on the table

NP_2 + past + V + Loc.

The gingham dog sat on the table

$\Rightarrow$ NP_1 + and

The gingham dog and

NP_2 + past + VI + Loc

the calico cat sat on the table

3. NP_1 + past + Vtr + NP
George built a rocket
NP_2 + past + Vtr + NP
Bill built a rocket
$\Longrightarrow$
NP_1 + and + NP_2 + past + Vtr + NP
George and Bill built a rocket.

4. NP_1 + past + Vtr + NP
The pilot made preparations
NP_2 + past + Vtr + NP
The stewardess made preparations
$\Longrightarrow$
NP_1 + and + NP_2 + past + Vtr + NP
The pilot and the stewardess made preparations.

5. NP_1 + past + Vi + Loc
Jack fell down
NP_2 + past + Vi + Loc
Jill fell down.
$\Longrightarrow$
NP_1 + and + NP_2 + past + Vi + Loc
Jack and Jill fell down.

6. NP_1 + past + Vtr + NP
Tweedledum fought a battle.
NP_2 + past + Vtr + NP
Tweedledee fought a battle.
$\Longrightarrow$
NP_1 + and + NP_2 + past + Vtr + NP
Tweedledum and Tweedledee fought a battle.

7. NP_1 + past + Vtr + NP
   Clara climbed the mountain
   NP_2 + past + Vtr + NP
   Heidi climbed the mountain
   ⟹
   NP_1 + and + NP_2 + past + Vtr + NP
   Clara and Heidi climbed the mountain

8. NP_1 + pres + Vi + Man + Loc
   Buttercups grow wild in Oregon.
   NP_2 + pres + Vi + Man + Loc
   Daisies grow wild in Oregon.
   ⟹
   NP_1 + and + NP_2 + pres + Vi + Man + Loc
   Buttercups and daisies grow wild in Oregon.

B. (Sentences 2, 4, and 8 offer another opportunity to discuss usage -- compound subjects joined by and demand a plural form of the verb. See AGREEMENT in the Usage Manual. You may also want to point out that in number 4 it is necessary to change the number of the predicate NP in order to make it agree with the plural subject in the transformation. You can also discuss what happens when the compound subject is joined by conjunctions other than and.)

1. Students will be unable to do this sentence at this time because it contains an indirect object, not yet accounted for in their Phrase Structure rules.

2. NP_1 + pres + have + en + Vid + Dir
   The owl has gone to sea
   NP_2 + pres + have + en + Vid + Dir
   The pussycat has gone to sea.
   ⟹
   # NP_1 + and + NP_2 + pres + have + en + Vid + Dir
   The owl and the pussycat have gone to sea.

3. NP_1 pres + M + Vi + Loc + Tm

Bud will work in the beanfields in the summer. ⟹

NP_2 + pres + M + Vi + Loc + Tm

Will will work in the beanfields in the summer.

NP_1 + and + NP_2 + pres + M + Vi + Loc + Tm

Bud and Will will work in the beanfields in the summer.

4. NP_1 + past + Be + NP

Mutt was a comic strip character. ⟹

NP_2 + past + Be + NP

Jeff was a comic strip character

#NP_1 + and + NP_2 + past + Be + NP

Mutt and Jeff were comic strip characters.

5. NP_1 + past + have + en + Vi + Tm

An elephant had escaped last night. ⟹

NP_2 + past + have + en + Vi + Tm

A tiger had escaped last night.

NP_1 + and + Np_2 + past + have + en + Vi + Tm

A tiger and an elephant had escaped last night

6. NP_1 + pres + have + en + be + ing + Vid + Dir

The planes have been going to Eugene. ⟹

NP_2 + pres + have + en + be + ing + V id + Dir

The trains have been going to Eugene.

NP_1 + and + NP_2 + pres + have + en + be + ing + Vid

The planes and the trains have been going

+ Dir

to Eugene.

7. NP_1 + pres + M + V_{mid} + NP
   Breakfast will cost seventy-five cents.
   NP_2 + pres + M + V_{mid} + NP
   Lunch will cost seventy-five cents.
   ⟹
   NP_1 + and NP_2 + pres + M + V_{mid} + NP
   Breakfast and lunch will cost seventy-five cents.

8. NP_1 + past + be + ing + Vi + Loc
   The stars were shining in the sky.
   NP_2 + past + be + ing + Vi + Loc
   The moon was shining in the sky.
   ⟹
   #NP_1 + and + NP_2 + past + be + ing + Vi + Loc
   The stars and the moon were shining in the sky.

Verb conjunctions

The sentence conjunctions and the subject conjunctions are fairly simple but the underlying principle--that conjunctions can occur when and only when the joined elements derive from the same point in the diagram--should be well established because it will make more complicated conjunctions easier to understand.

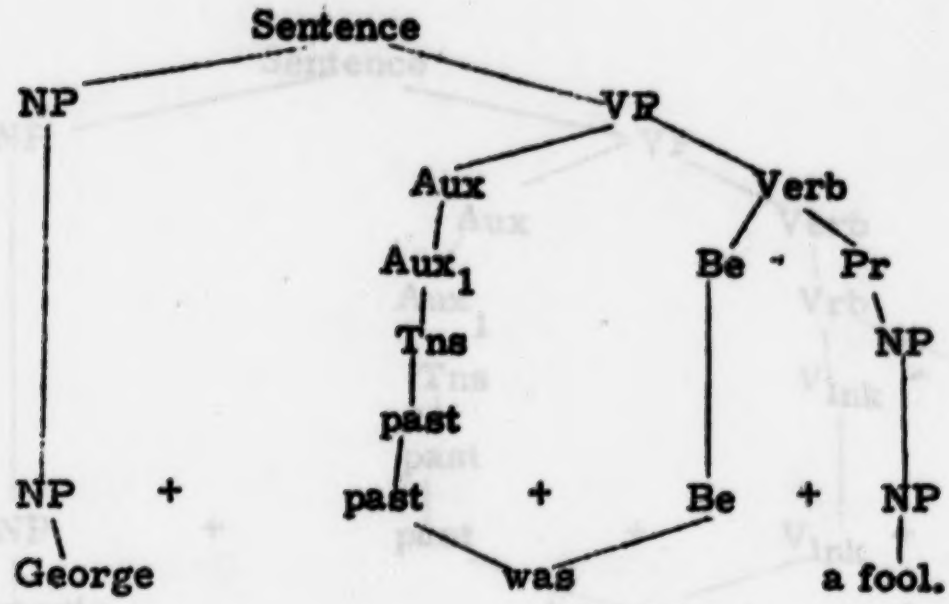
The pairs of sentences at the bottom of page 7 and top of page 8 are alike in all respects except the verb. Your students will undoubtedly see immediately that they can be joined to form one sentence with a compound verb (Mary ran and jumped. etc.) The diagrams on page 8 show at a glance that the pair of sentences in 5 have the same kind of diagrams and differ only in the form Vtr takes in the final sentence.

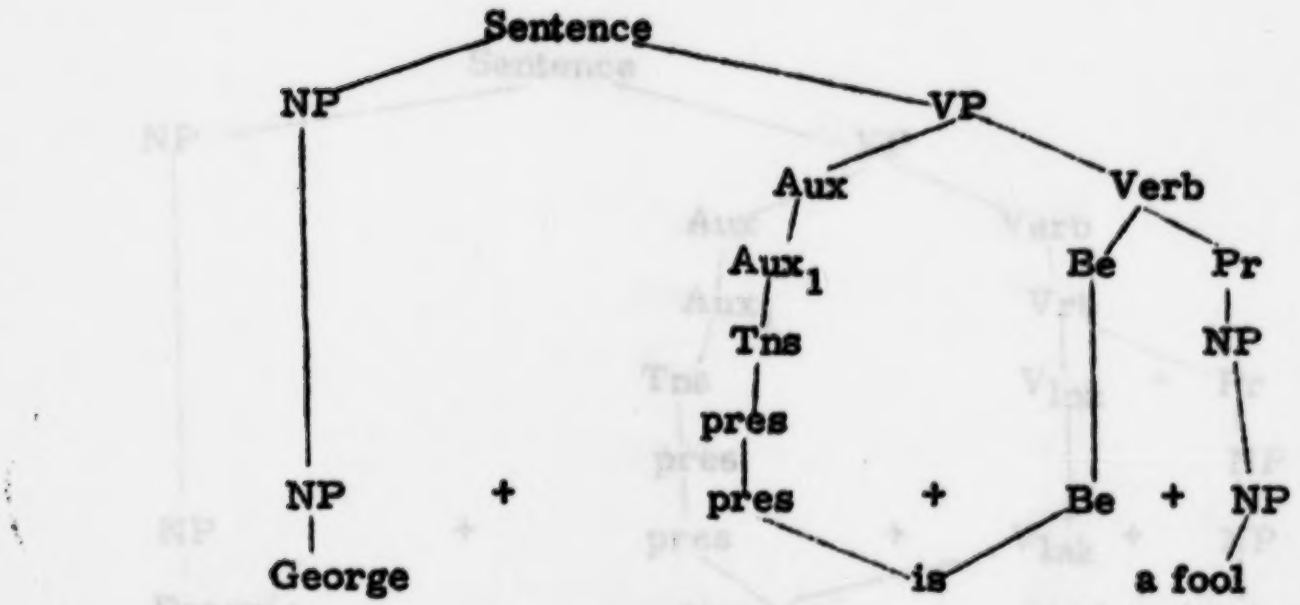
You may want to point out -- or ask why -- the tense is attached to the verb in the transformation, emphasizing again that though tense is an independent element it must be attached to the first item in the verb string. It is part of the verbs raised and lowered.

Exercise 4: Page 9

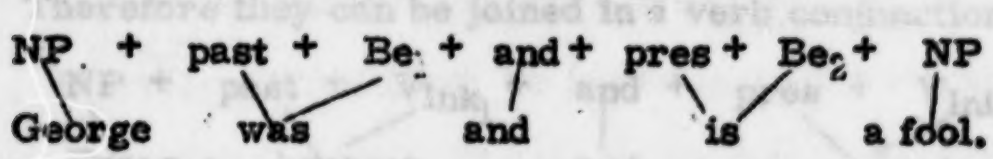
(Though we have skipped steps in many diagrams, it will be important in this exercise to require your students to include every step of the verb generation because often verbs which appear alike will derive from different points.)

1.

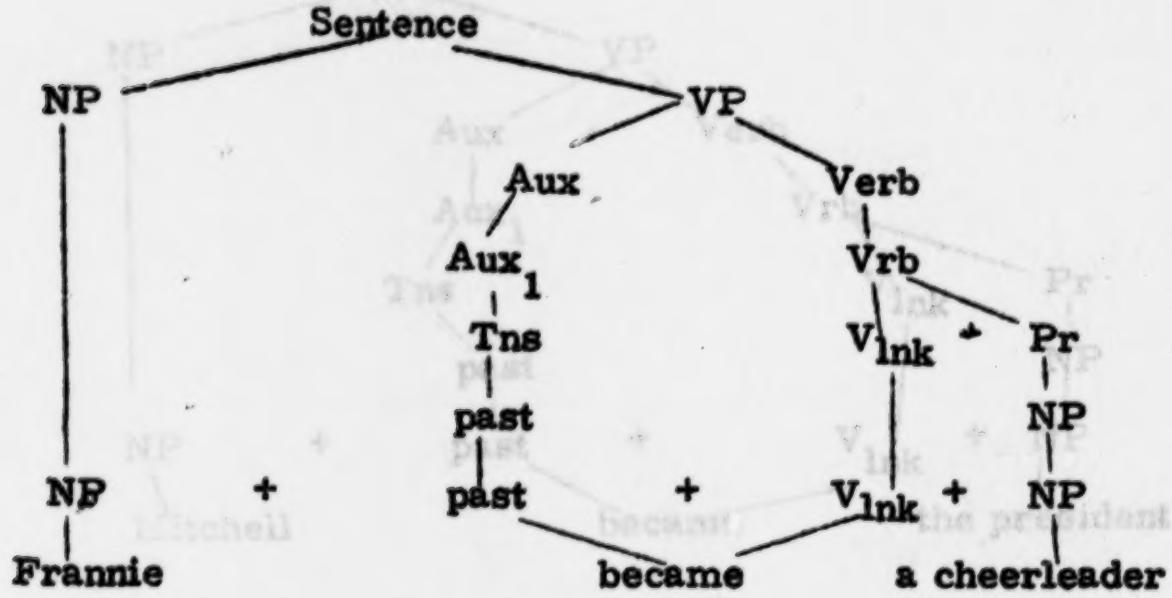


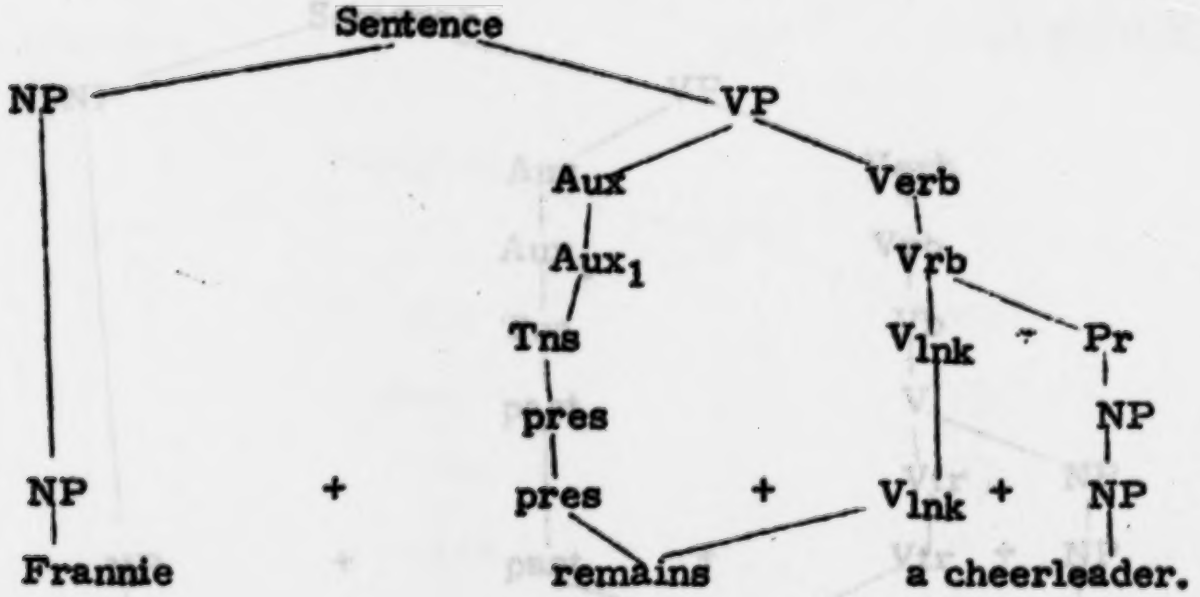


The diagrams are alike.
The sentence strings are different in the verb and the tense.
The unlike elements derive from the same point in the branching diagram.
They can be joined in a verb conjunction.



2.



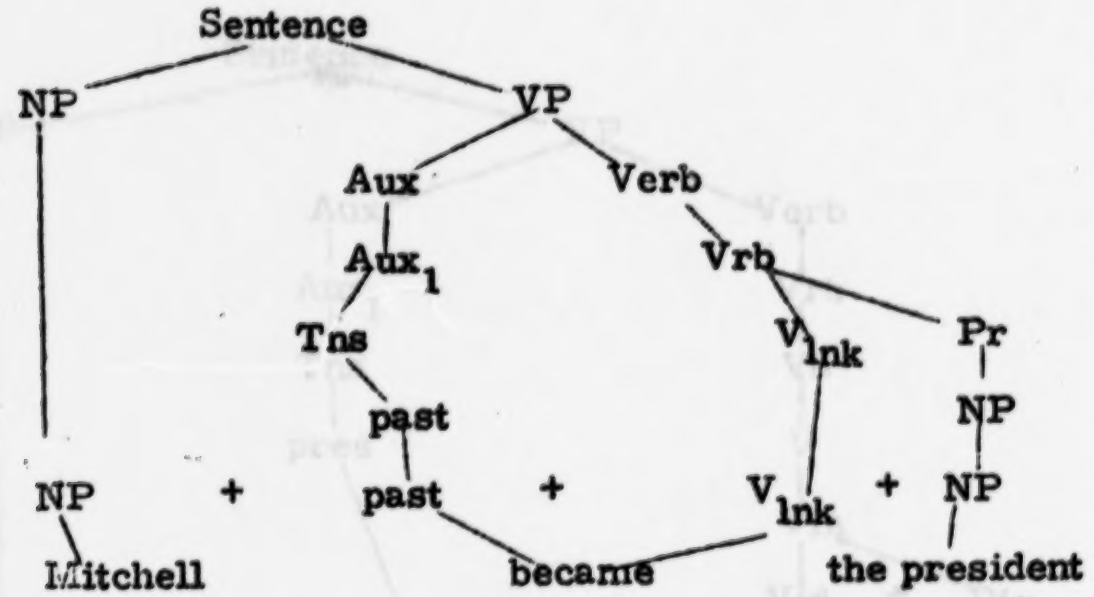


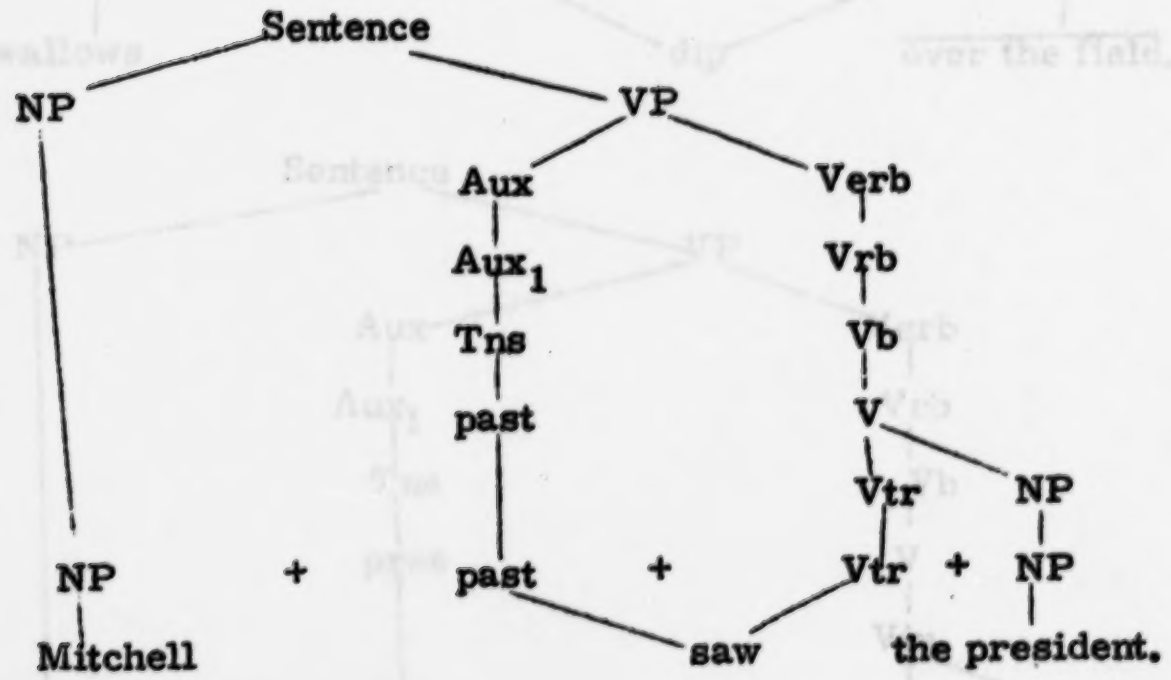
The diagrams are alike except for tense.
The sentence strings are different in the verbs and tense.
The unlike elements derive from the same point in the diagram (V_{lnk}).
Therefore they can be joined in a verb conjunction.

NP + past + V_{lnk_1} + and + pres + V_{lnk_2} + NP

Frannie became and remains a cheerleader.

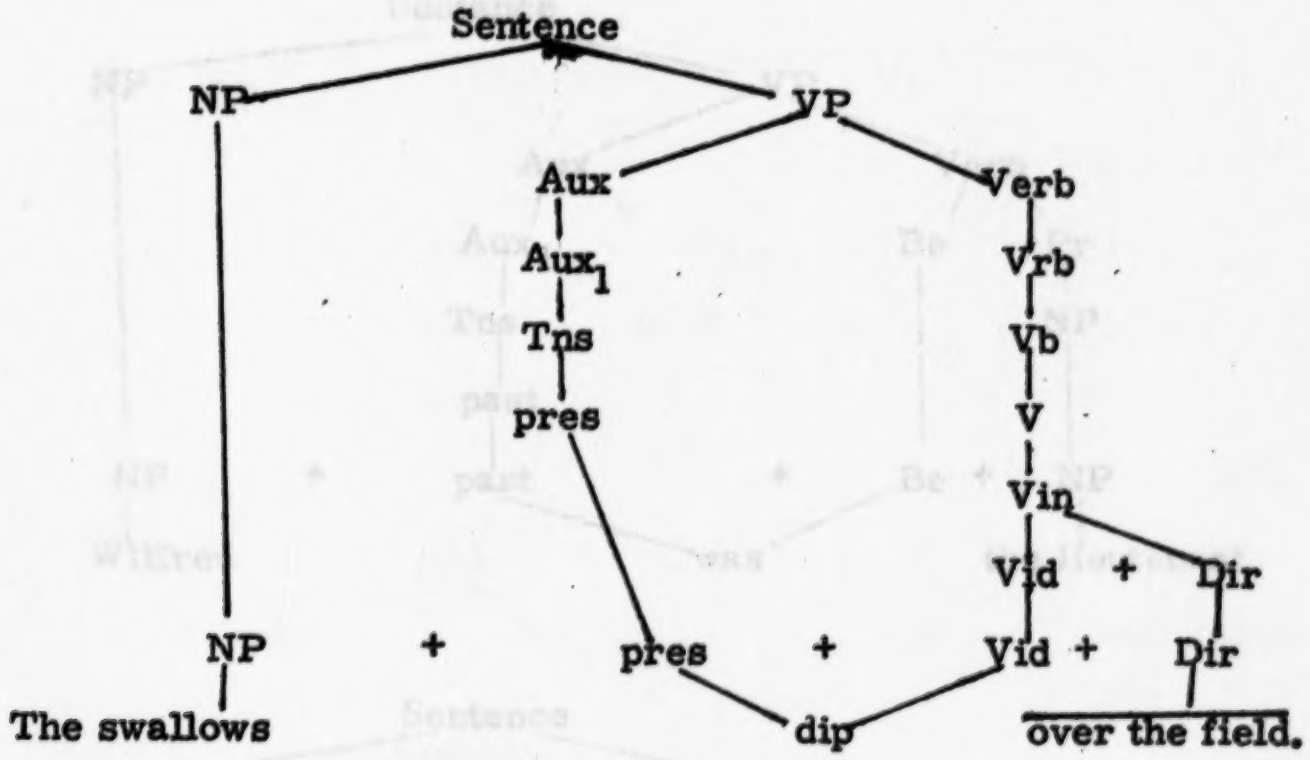
3.

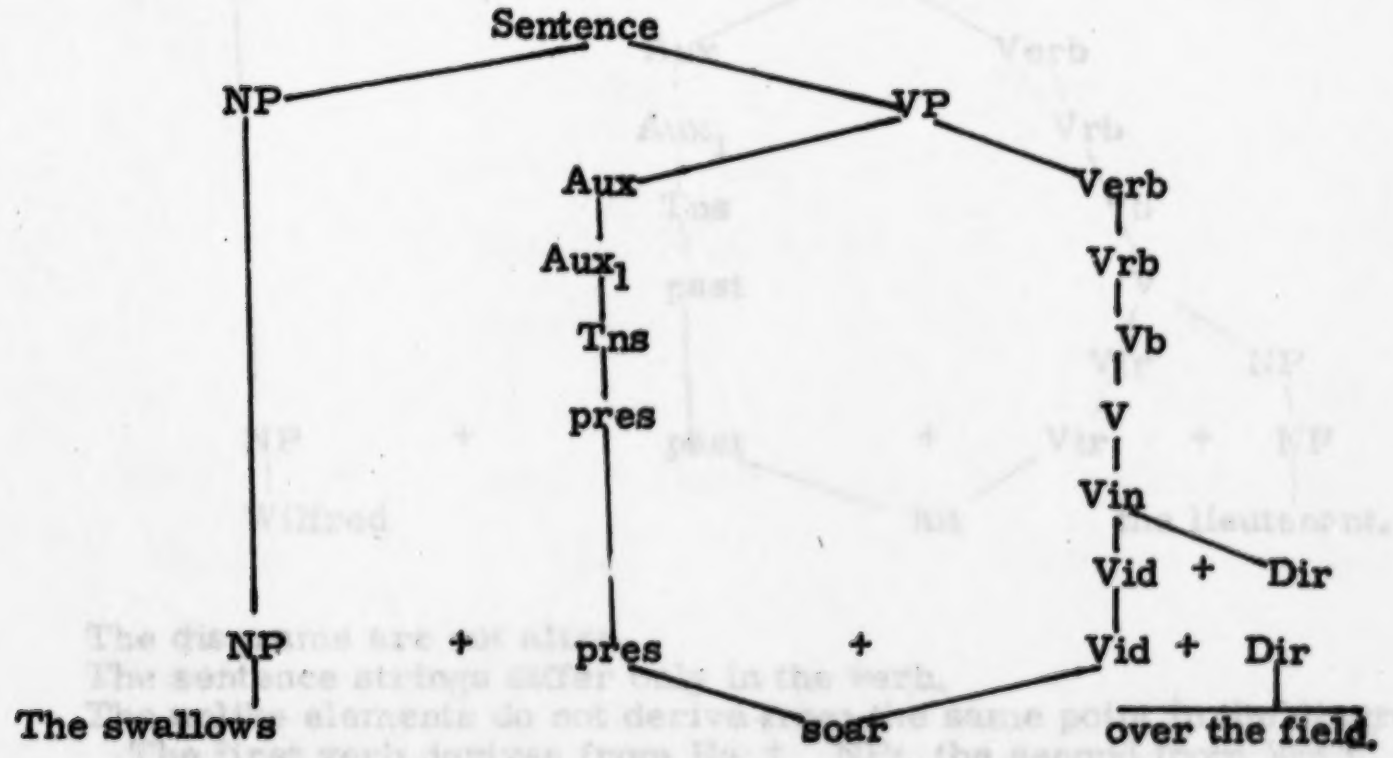




The diagrams are not alike.
The sentence strings are not alike.
They differ in the verb.
The unlike elements do not derive from the same point in the diagram.
Therefore they cannot be joined in a verb conjunction.

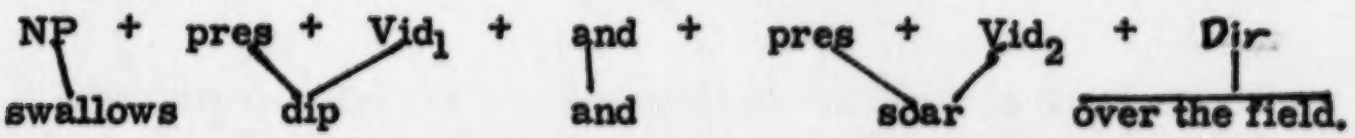
The verbs, though they look like the same verb, are different. The first derives from V_{lnk} + Pr; the second from Vtr + NP. This is the reason they cannot be joined in a conjunction. The students will readily agree that we wouldn't say "Mitchell became and saw the president." By examining the diagram they can see <u>why</u> we don't say it. Thus the grammar gives us a linguistic reason for our verbal behavior.



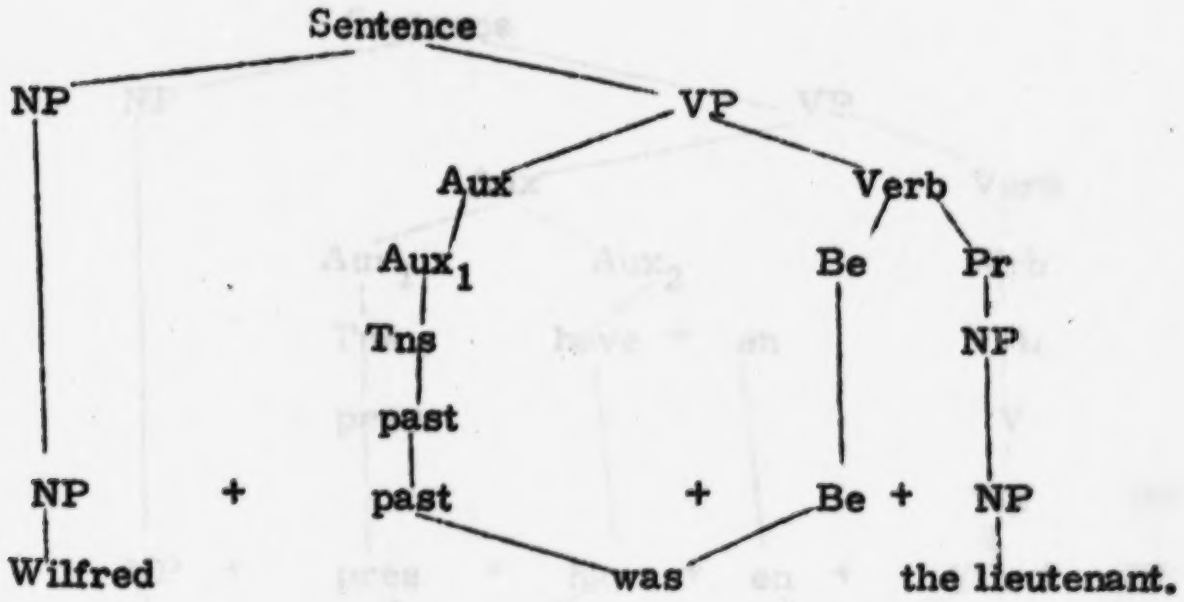


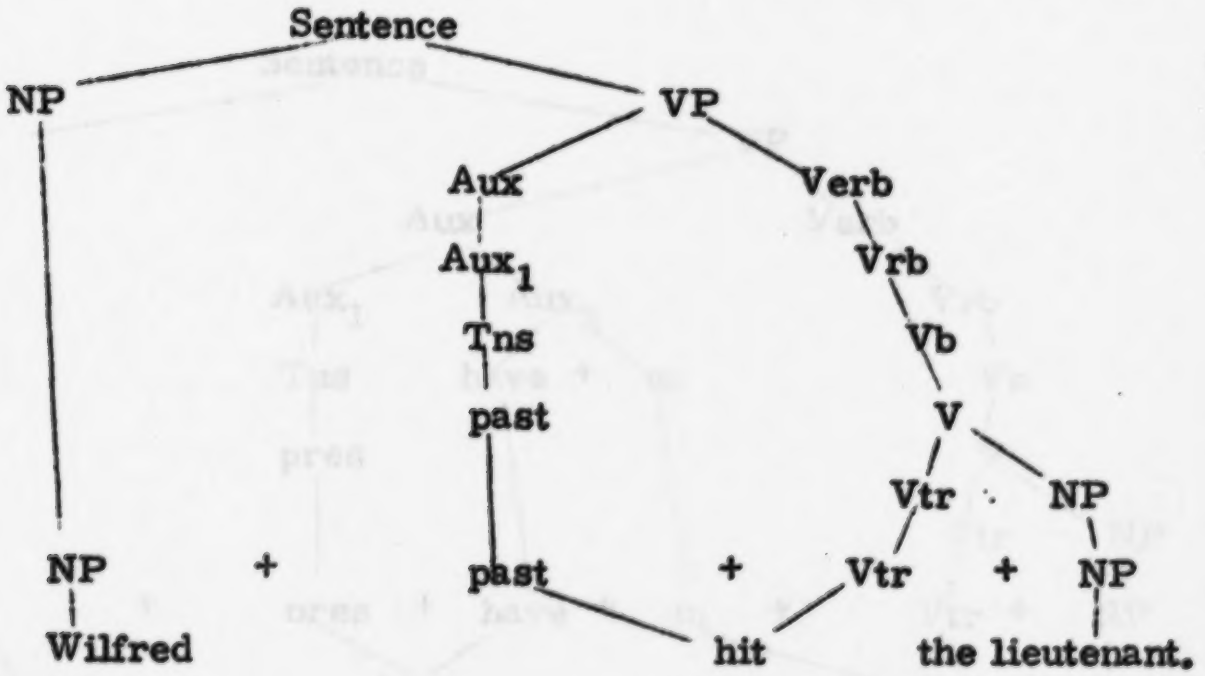
The diagrams are alike.
The sentence strings are different only in the verb.
The unlike elements derive from the same point in the diagram.
(Vcd)

Therefore they can be joined in a verb conjunction.



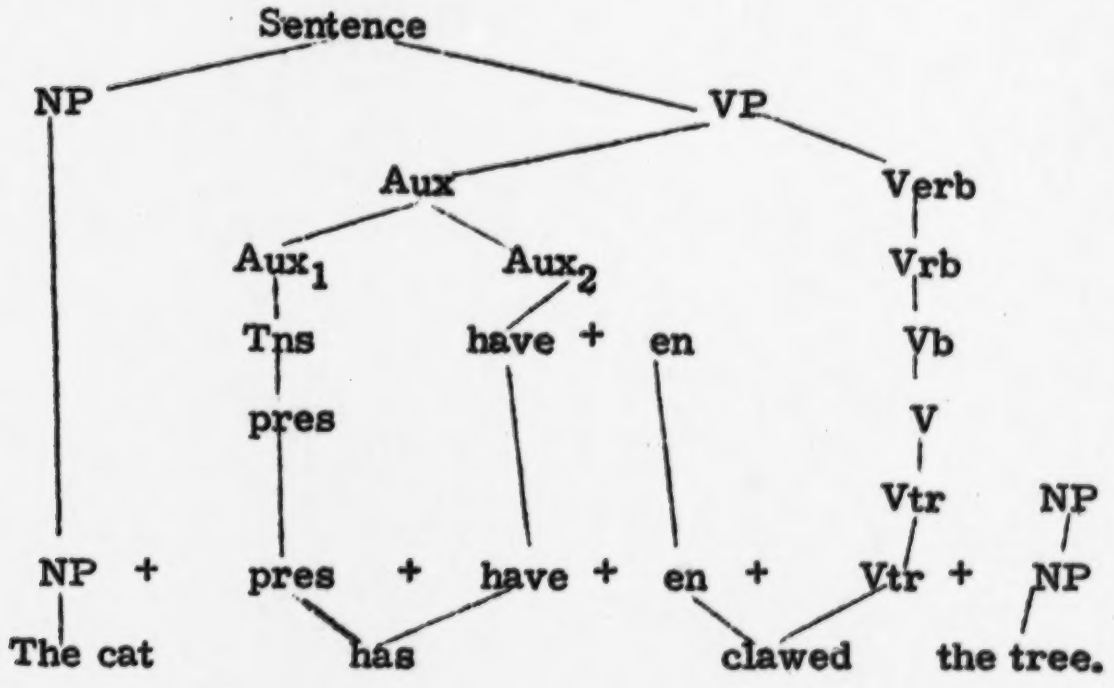
5.

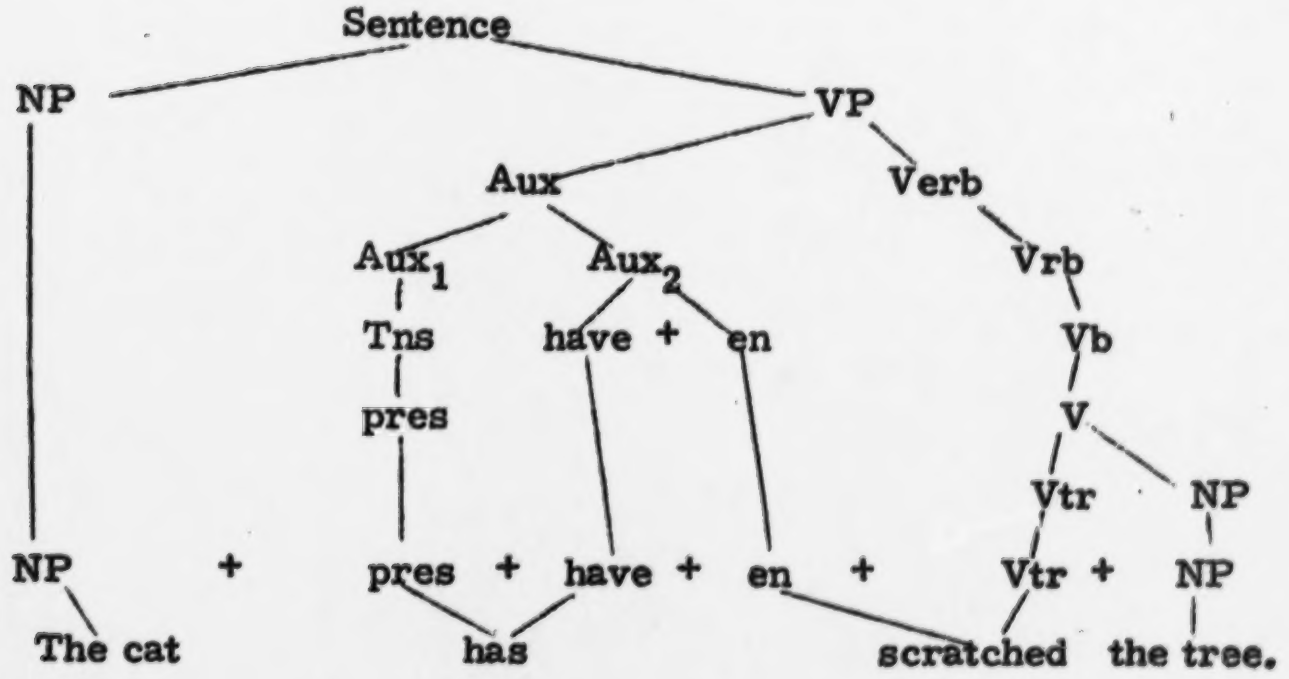




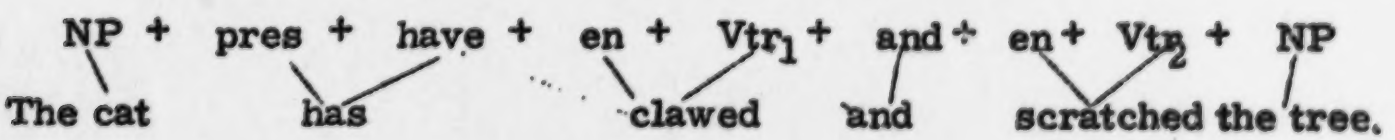
The diagrams are not alike.
The sentence strings differ only in the verb.
The unlike elements do not derive from the same point in the diagram. The first verb derives from Be + NP; the second from Vtr + NP.
Therefore they cannot be joined in a verb conjunctions. This is why we cannot say "Wilfred was and hit the lieutenant."

6.





The diagrams are alike.
The verb strings differ only in the form of the main verb.
The unlike elements do derive from the same point in the diagram.
(Vtr)
Therefore they can be joined in a verb conjunction.



You will want to point out to your students that only in those sentences (1, 2, 4, and 6) where the verbs derive from the same point in the diagram can a conjunction be performed. The sentences in 3 and 5, though on the surface they seem to be like the others, differing only in the main verb, cannot be so joined because the verbs actually derive from different points. The last pair is interesting because only the en + Vtr in each sentence needs to be involved in the conjunction. The en, of course, must be included because it is part of scratched, but the

tense sign attaches to the have; therefore it need not be repeated twice in the transformed string.

Exercise 5: Page 10

1. NP + past + Vtr + NP
   The guide encouraged the hikers.
   NP + past + Vtr + NP
   The guide instructed the hikers. ⟹

   NP + past + Vtr + and + past + Vtr_2 + NP
   The guide encouraged and instructed the hikers.

2. NP + pres + Vi + Loc
   Flowers wither in the desert.
   NP + pres + Vi + Loc
   Flowers die in the desert ⟹

   NP + pres + V_1 + and + pres + V_2 + Loc
   Flowers wither and die in the desert.

3. NP + past + Vtr + NP
   Gerald stole the ring.
   NP + past + Vtr + NP
   Gerald hid the ring. ⟹

   NP + past + Vtr_1 + and + past + Vtr_2 + NP
   Gerald stole and hid the ring.

4. NP + pres + have + en + Vtr + NP
   The tourist has caught the salmon.
   NP + pres + have + en + Vtr + NP
   The tourist has weighed the salmon. ⟹

   NP + pres + have + en + Vtr_1 + and + en + Vtr_2 + NP
   The tourist has caught and weighed the salmon.

5. NP + past + V_i + Loc

The plane bounced above the river

NP + past + V_i + Loc

The plane shook above the river. ⟹

NP + past + V_{i_1} + and + past + V_{i_2} + Loc

The plane bounced and shook above the river.

6. NP + past + V_i + Loc

The worm wiggled on the tomato plant

NP + past + VI + Loc

The worm squirmed on the tomato plant. ⟹

NP + past + V_{i_1} + and + past + V_{i_2} + Loc

The worm wiggled and squirmed on the tomato plant.

7. NP + past + Vi + Loc

The plane crashed in the field.

NP + past + Vi + Loc

The plane burned in the field. ⟹

NP + past + Vi_1 + and + past + Vi_2 + Loc

The plane crashed and burned in the field.

8. NP + past + be + ing + Vtr + NP

The cowboys were roping the steer.

NP + past + be + ing + Vtr + NP

The cowboys were trying the steer. ⟹

NP + past + be + ing + Vtr_1 + and + ing + Vtr_2 +

The cowboys were roping and tying

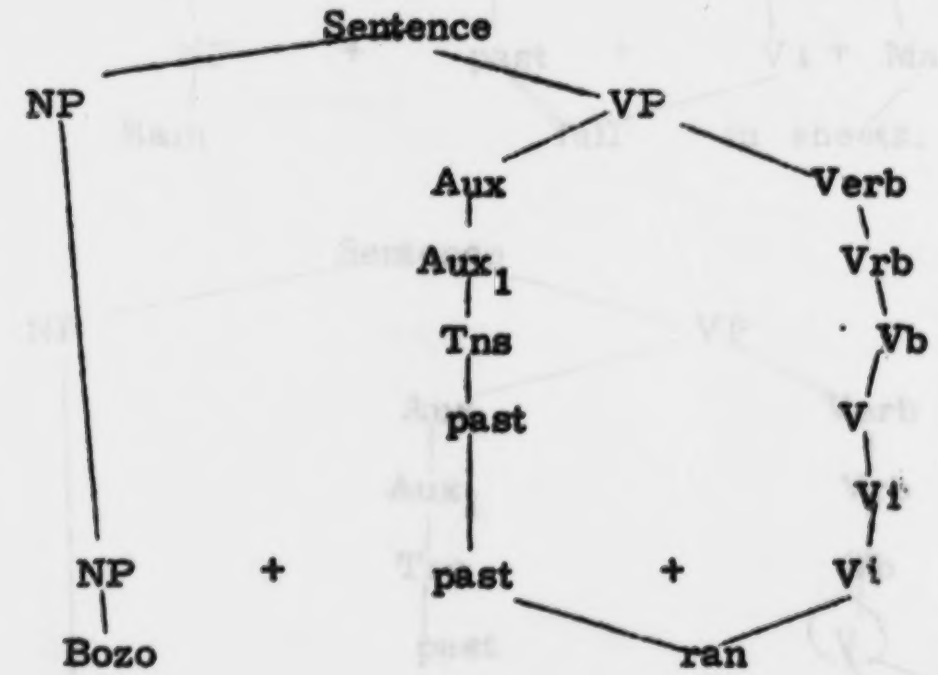
NP

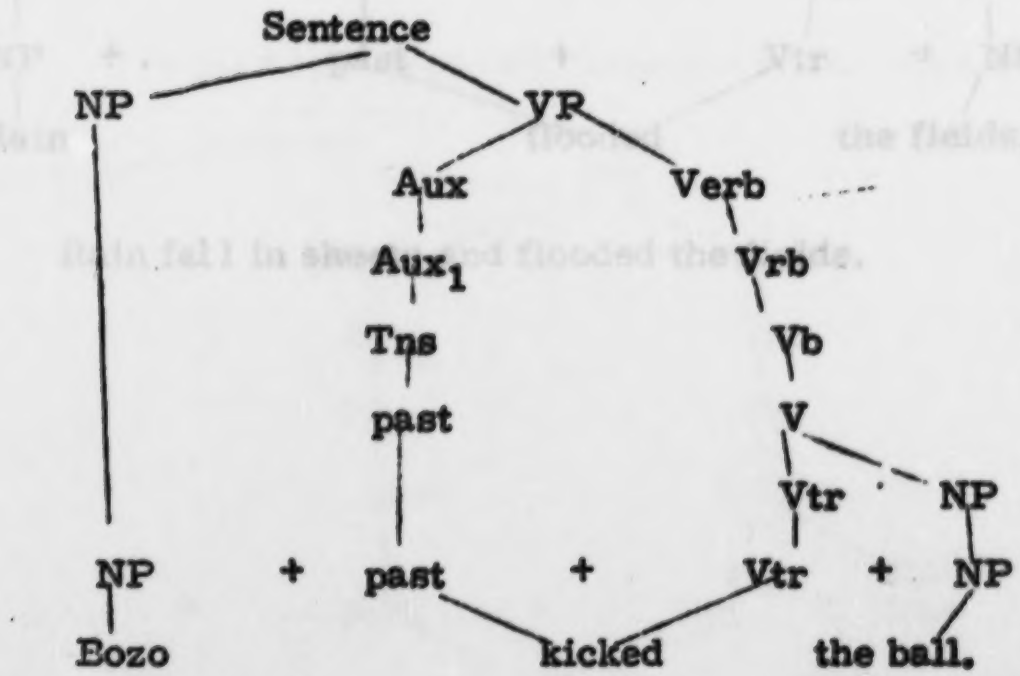
the steer.

The last pair of sentences is interesting because only the ing + Vtr needs to be included in the transformation. The past + be need be repeated only once, but because the ing attaches to the main verbs which are involved in the transformation, it must be placed in the string before each.

Beginning at page 13, we are working with sentences which have several elements in the VP which differ. When this happens, the principle which has governed all the previous conjunctions still holds: when sentences are alike except for certain elements, they may be joined if the unlike elements can be traced back to a common point in the diagram. When there are several elements unlike it is usually necessary to go back to VP as a common point, though in the sentences about Bozo it is necessary to go back only to V. Everything below the common point must be included in the conjunction.

Thus:

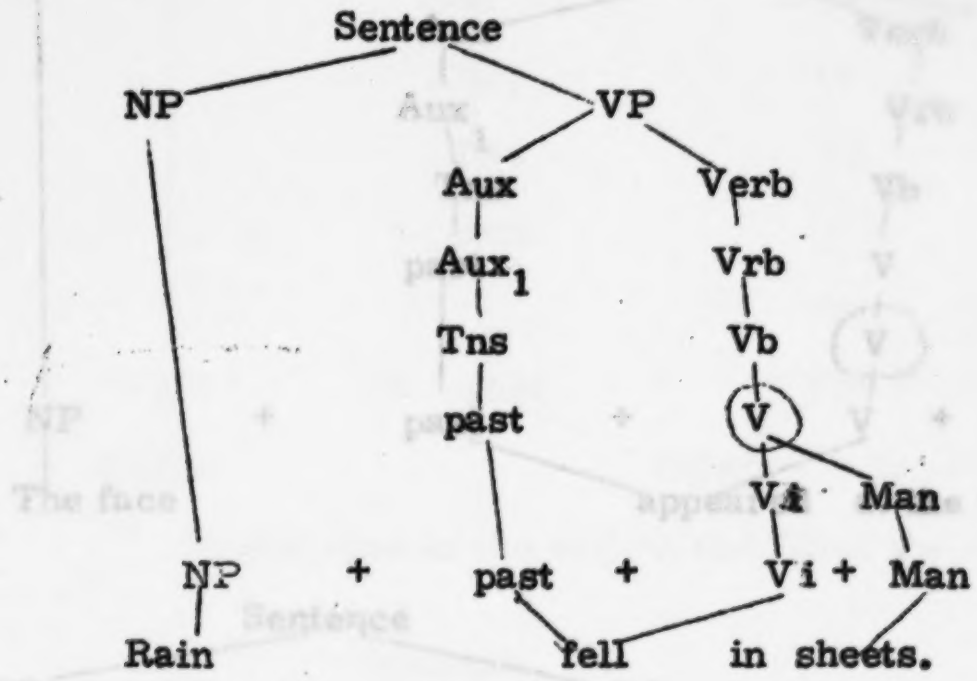


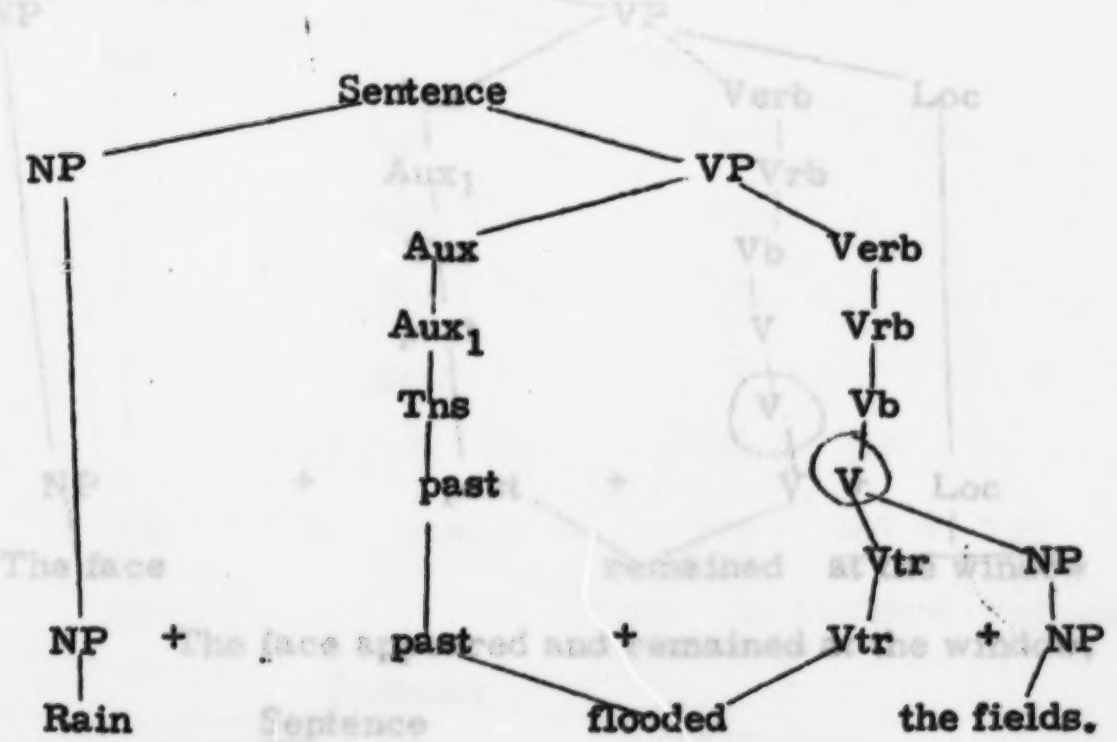


The common point is V. Therefore everything below that point must be included in the transformation --- the VI and Vtr + NP.

#Exercise 6: Page 13

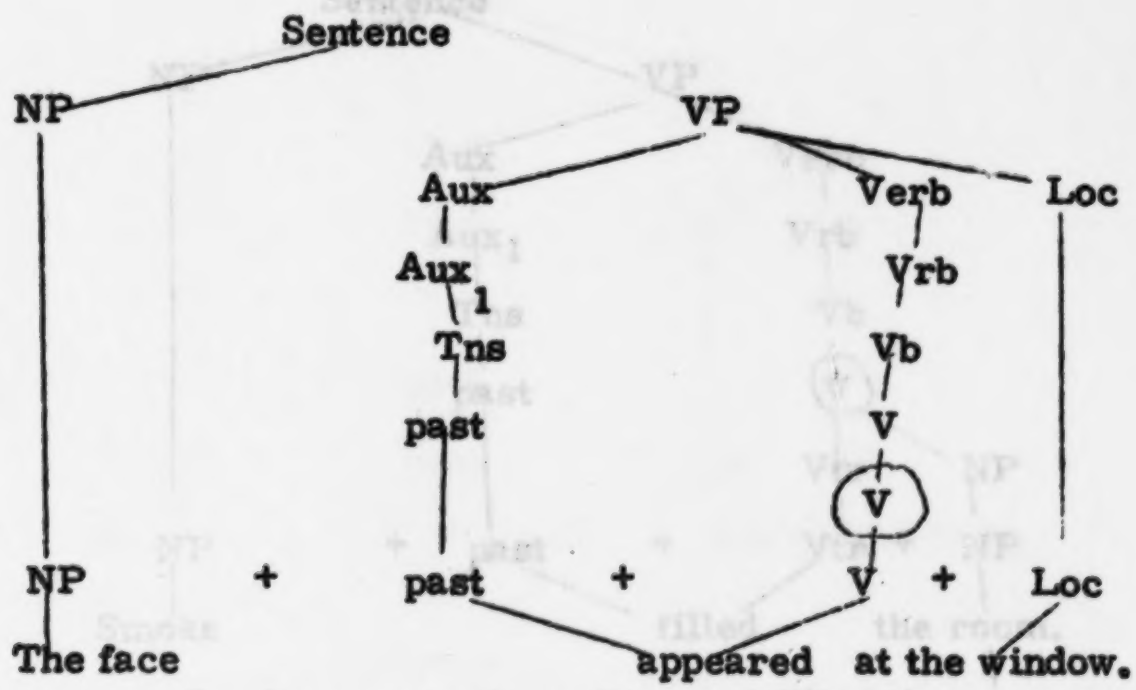
1.

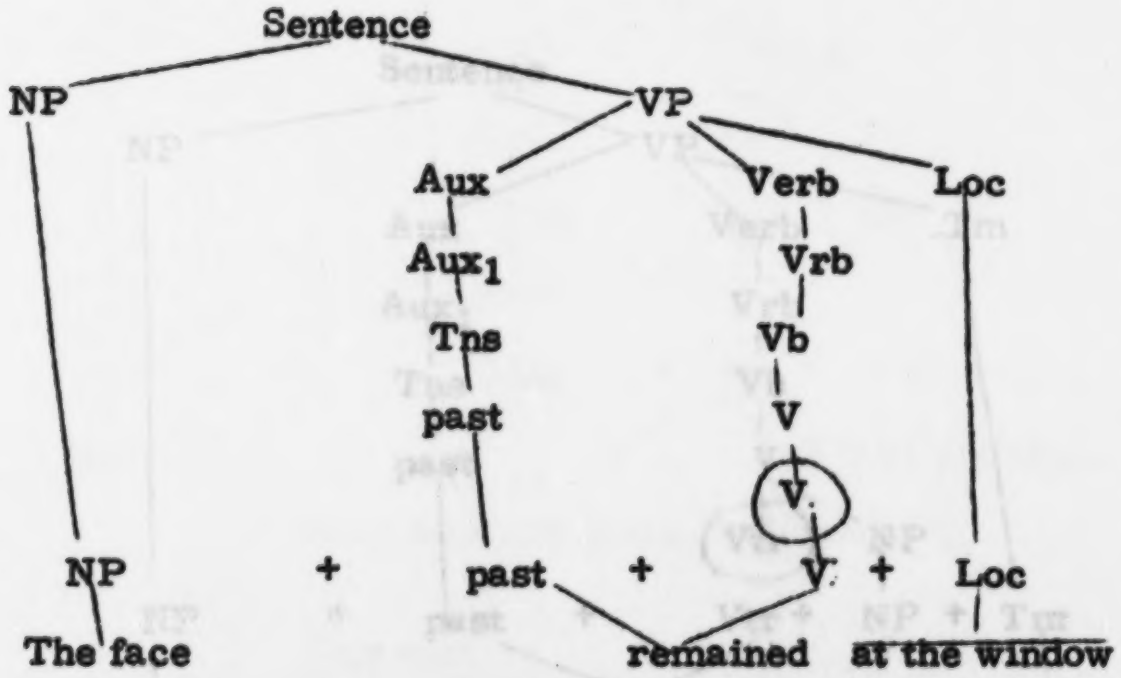




Rain fell in sheets and flooded the fields.

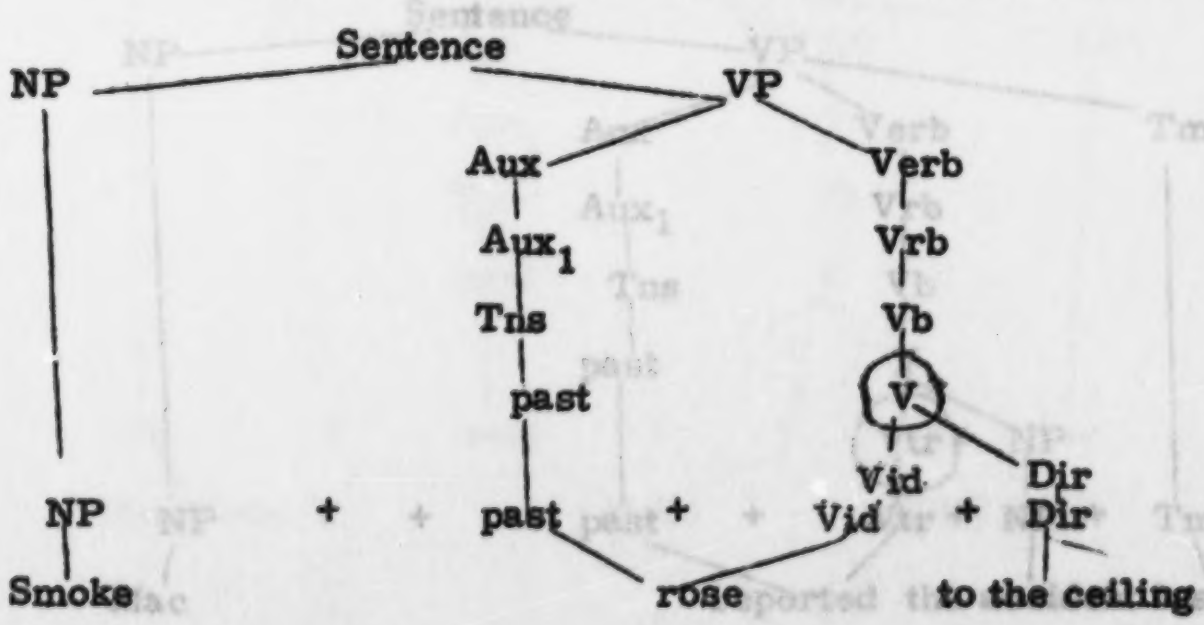
2.

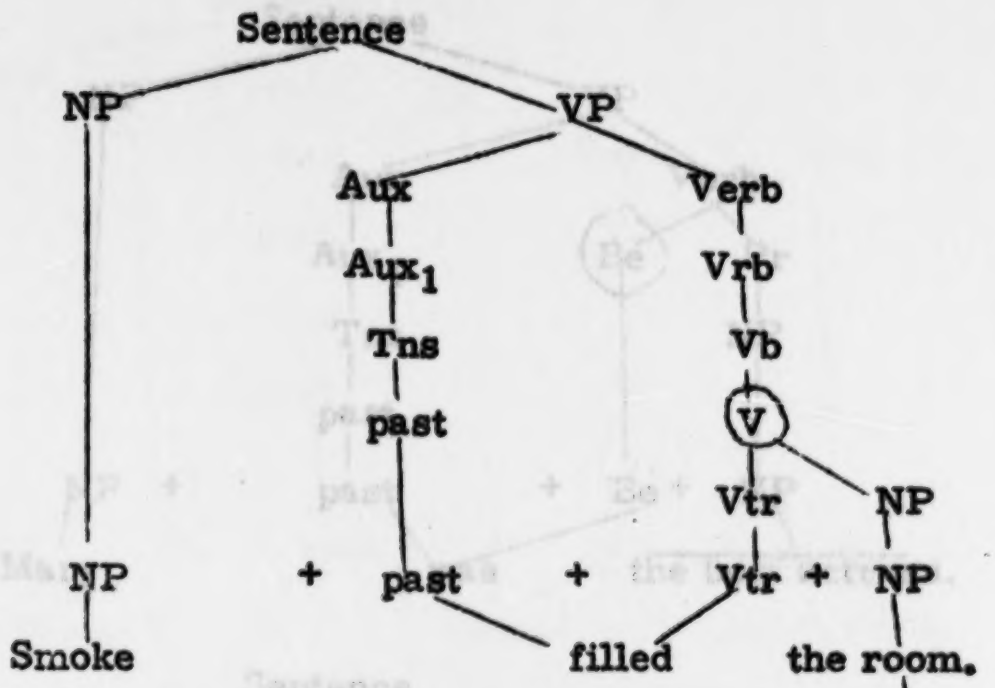




The face appeared and remained at the window.

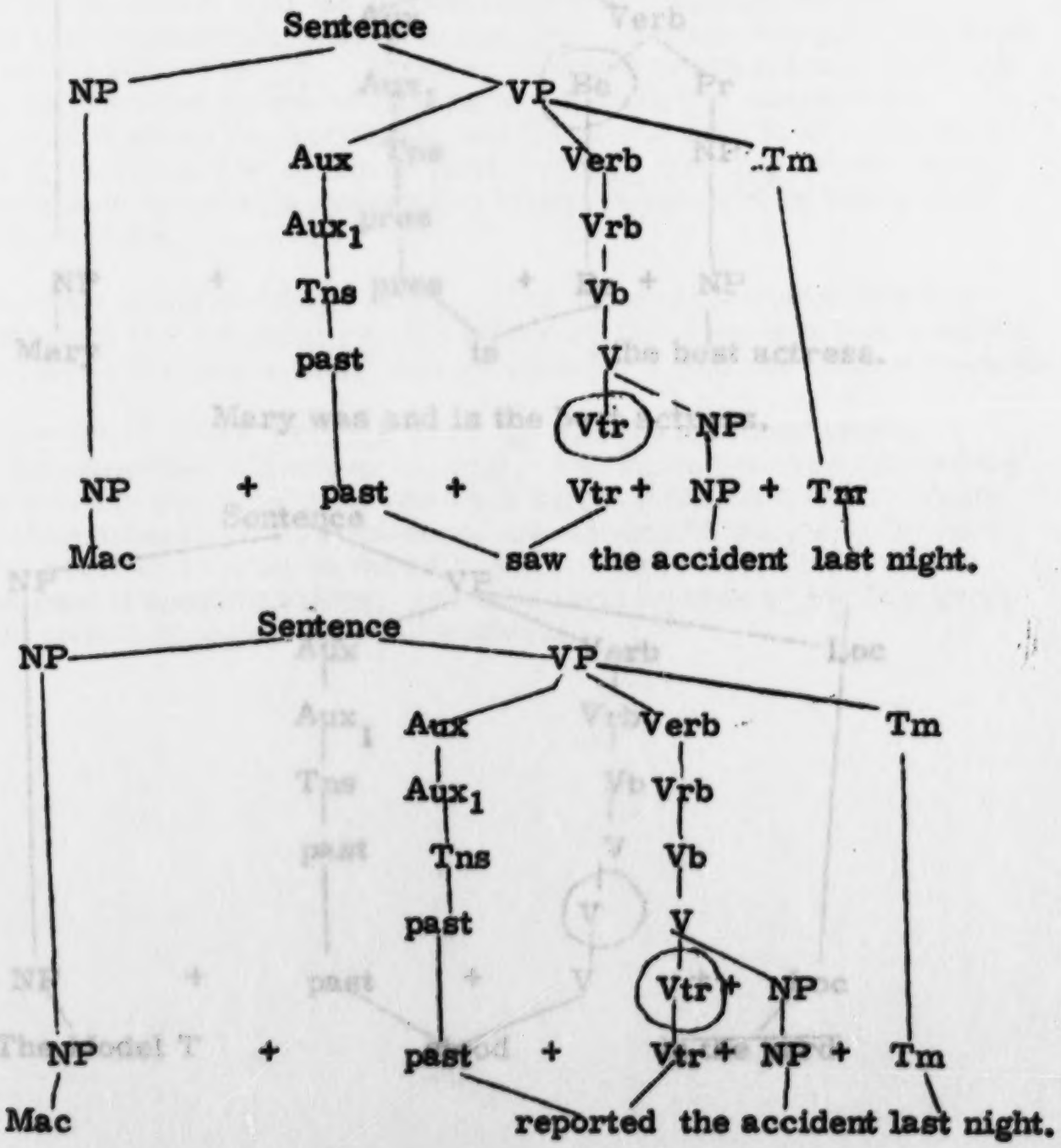
3.





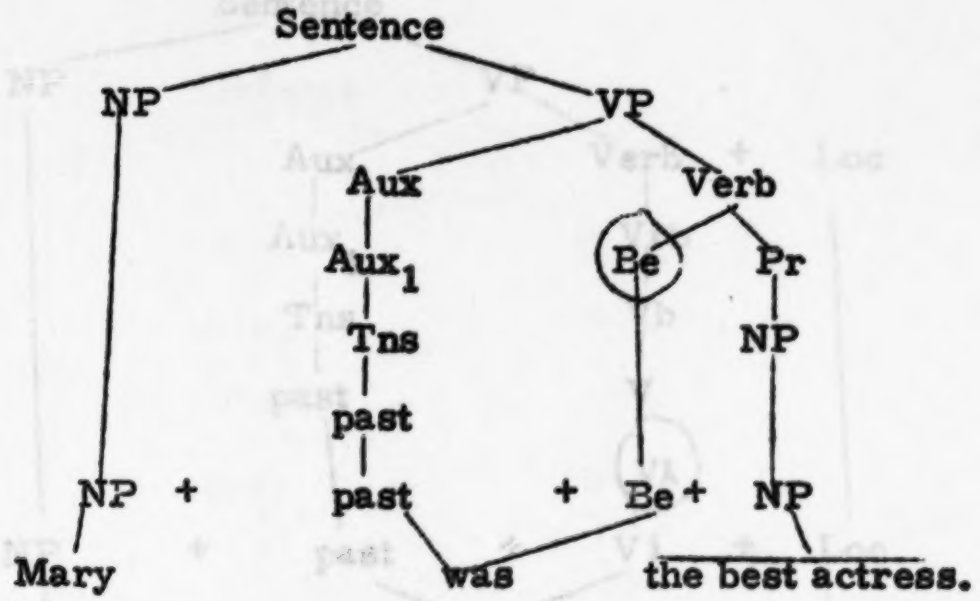
Smoke rose to the ceiling and filled the room.

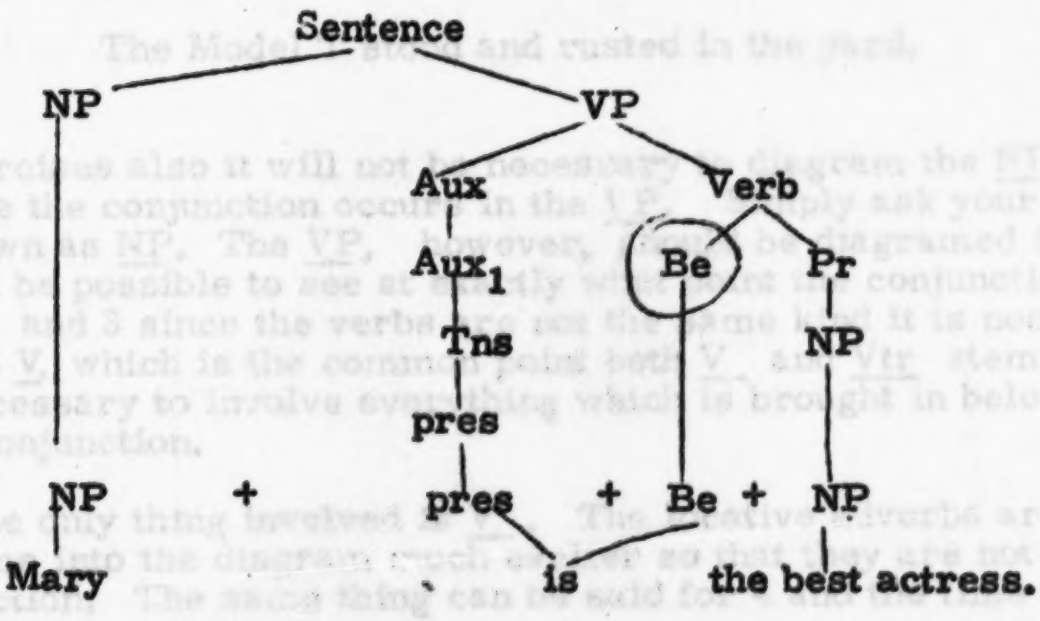
4.



Mac saw and reported the accident last night.

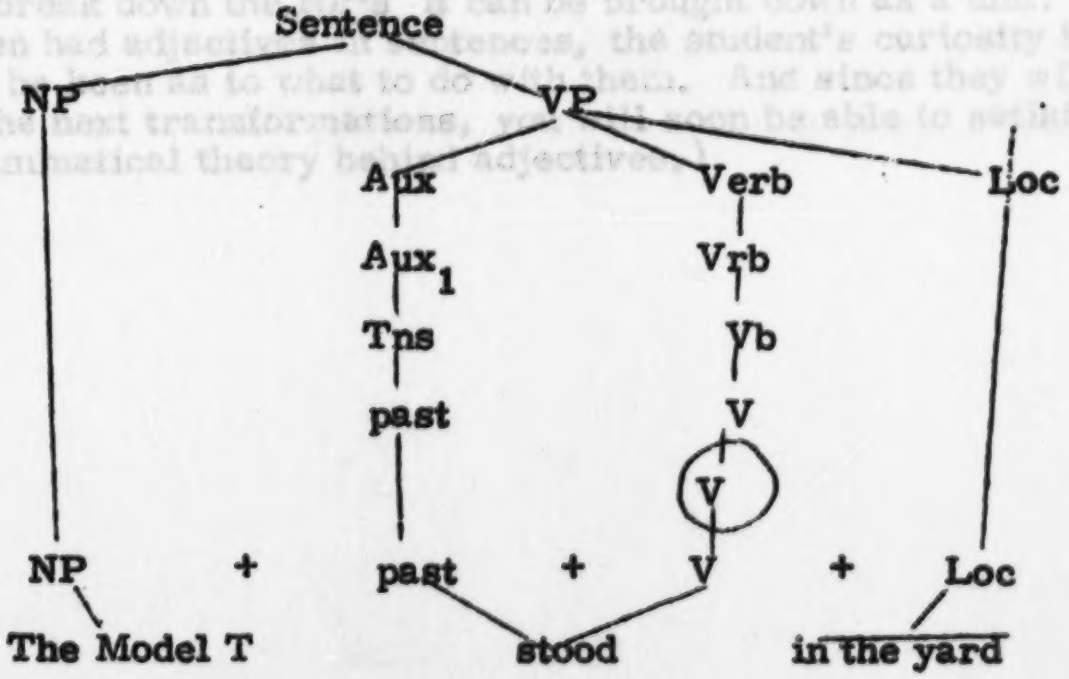
5.

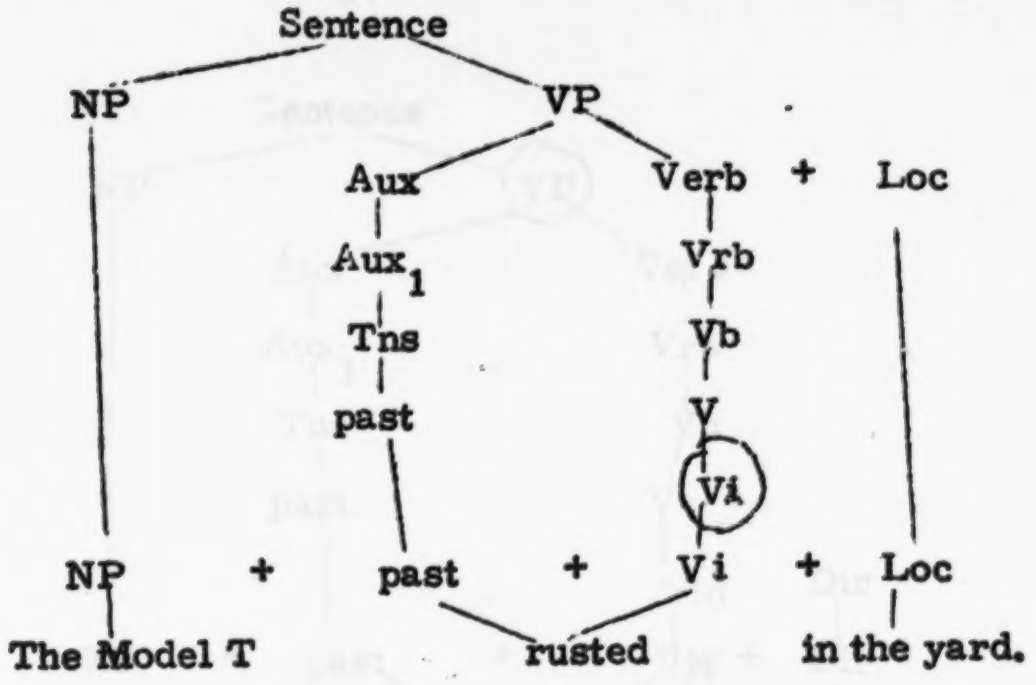




Mary was and is the best actress.

6.





The Model T stood and rusted in the yard.

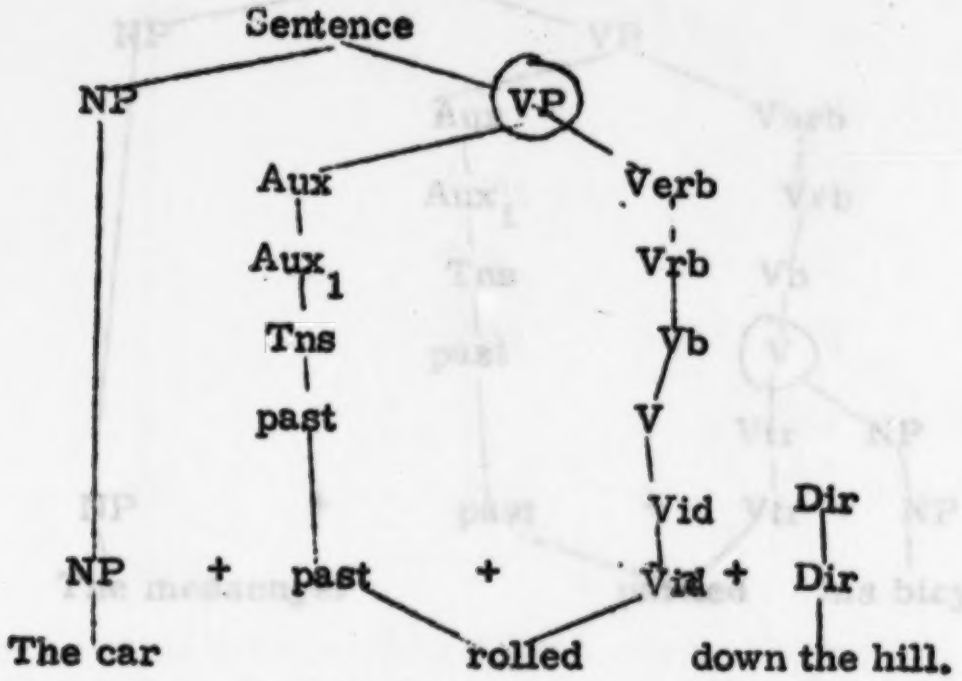
(#In these exercises also it will not be necessary to diagram the NP in detail since the conjunction occurs in the VP. Simply ask your students to bring it down as NP. The VP, however, should be diagramed in detail so that it will be possible to see at exactly what point the conjunction occurs. In 1, and 3 since the verbs are not the same kind it is necessary to go back to V, which is the common point both V. and Vtr stem from. Then it is necessary to involve everything which is brought in below that point in the conjunction.

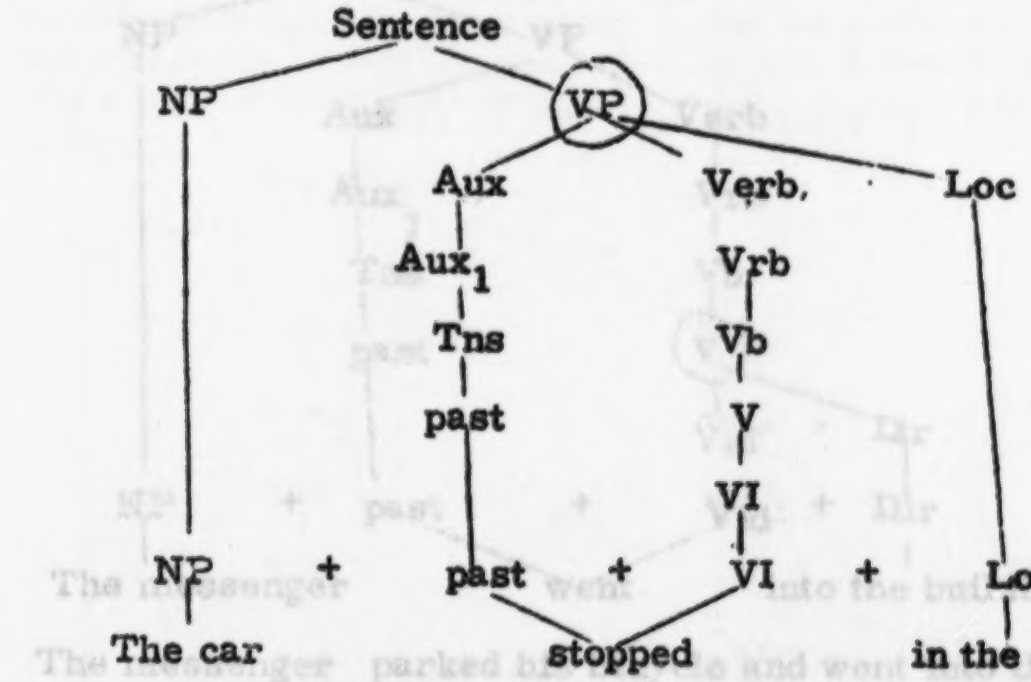
In 2 and 6, the only thing involved is V. . The locative adverbs are the same and come into the diagram much earlier so that they are not involved in the conjunction. The same thing can be said for 4 and the time adverbial.

In 5, the conjunction occurs with the verb Be and its attached tense. In 5 there is an embedded adjective - best, but since you are not asking students to break down the NP's it can be brought down as a unit. Since we have often had adjectives in sentences, the student's curiosity by this time should be keen as to what to do with them. And since they will be handled in the next transformations, you will soon be able to satisfy them with the grammatical theory behind adjectives.)

B.

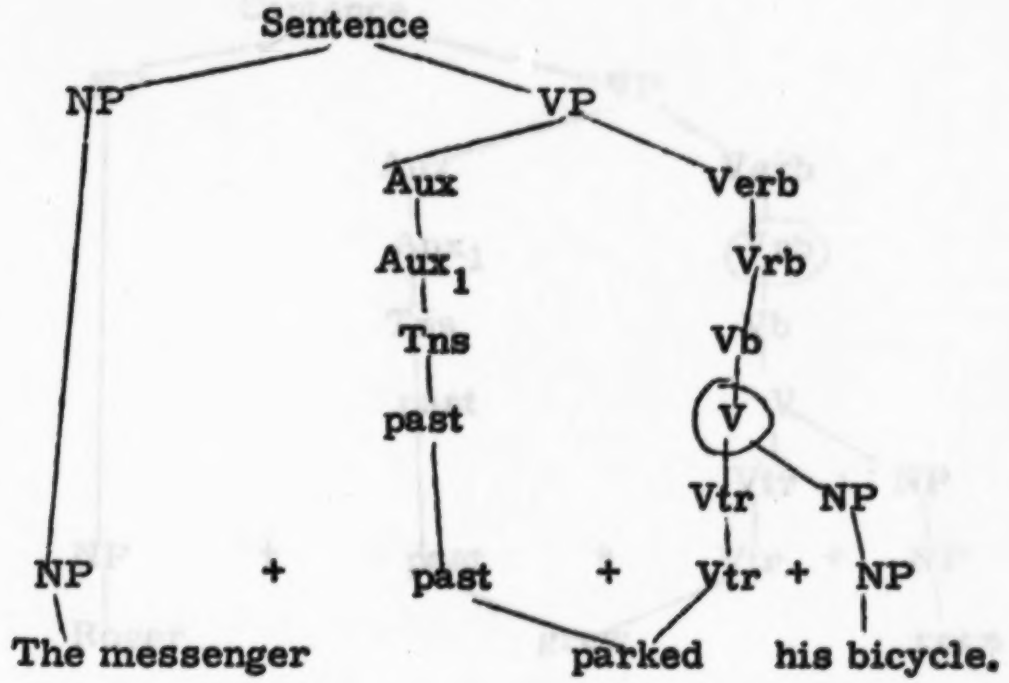
1.

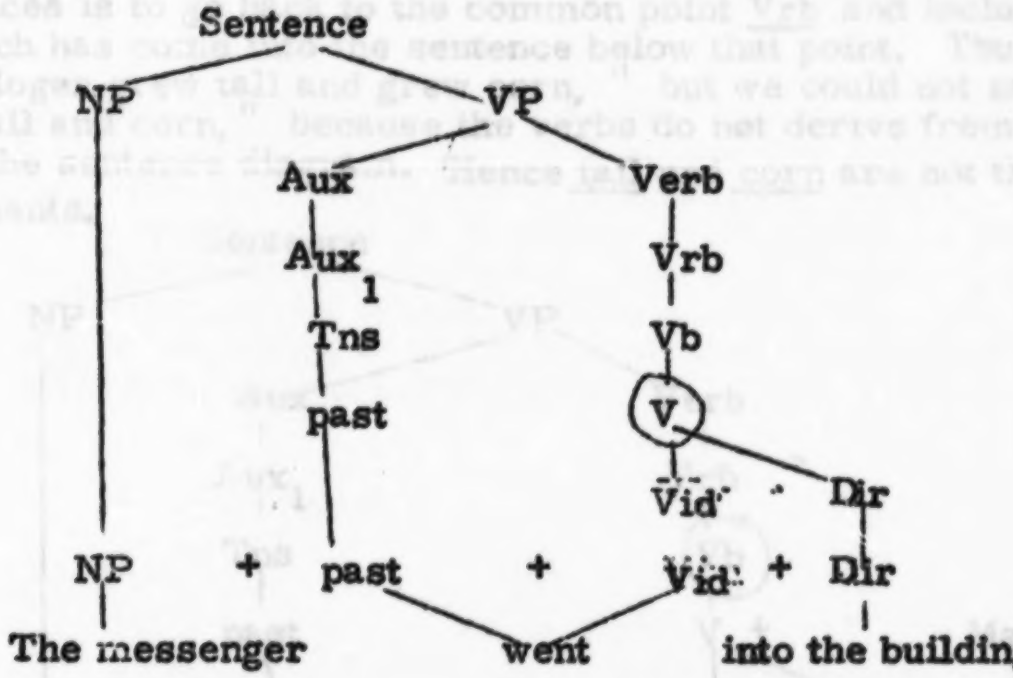




The car rolled down the hill and stopped in the field.

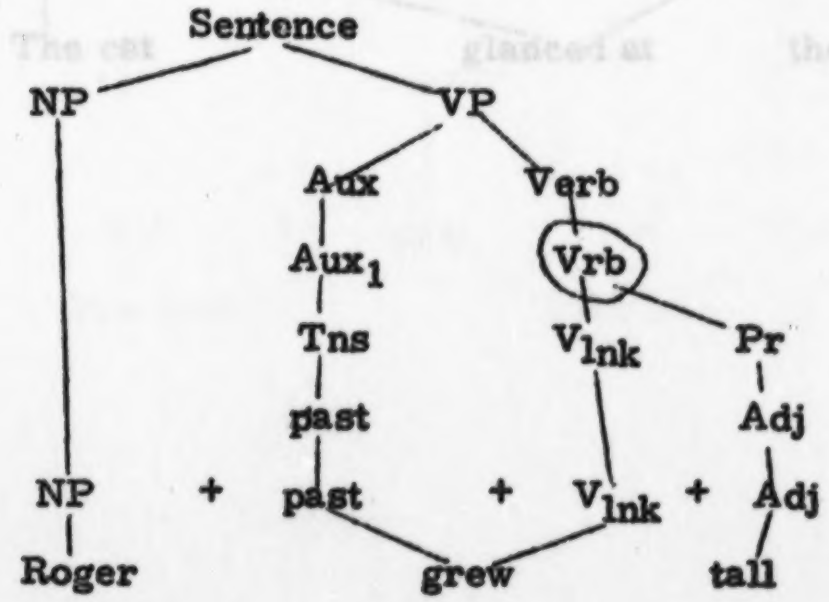
2.

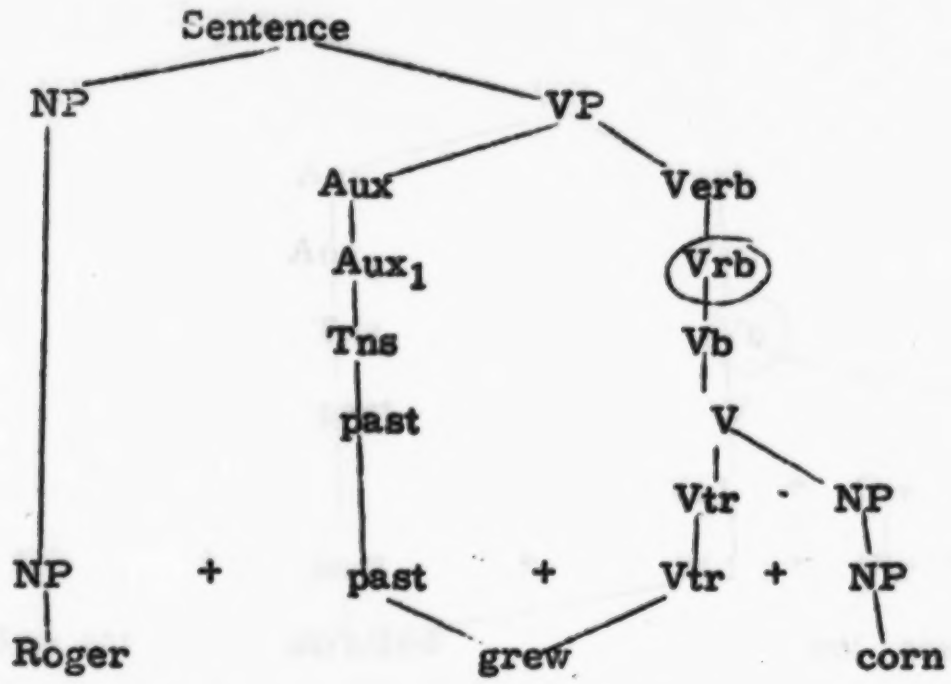




The messenger parked his bicycle and went into the building.

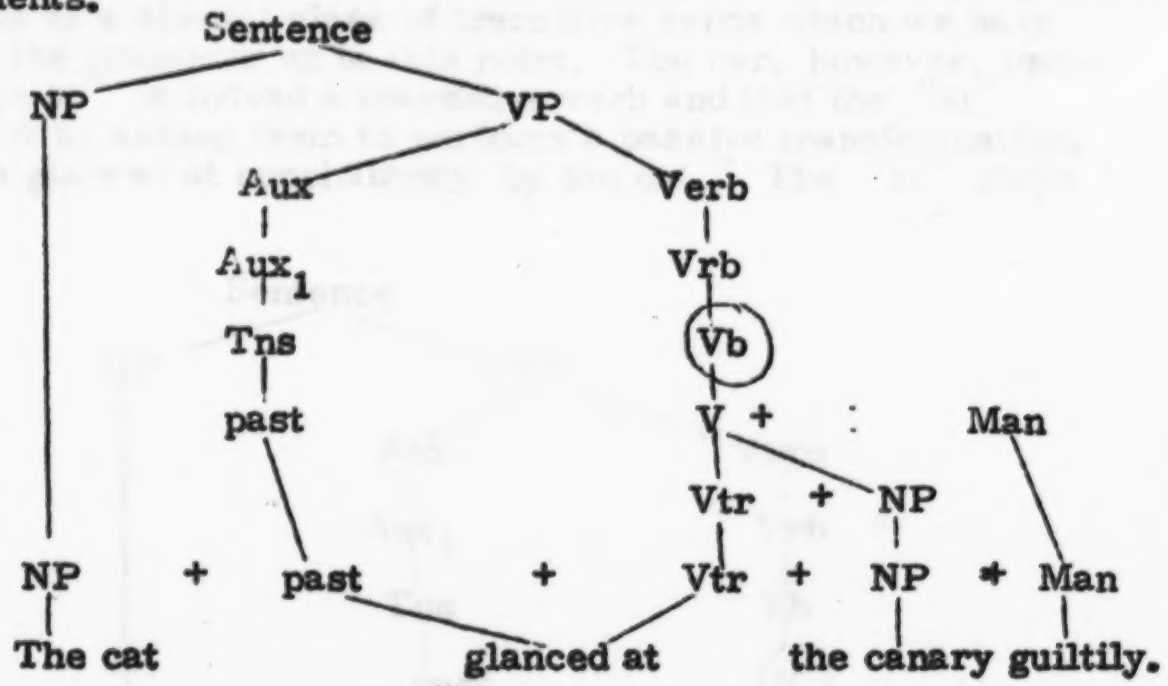
3.

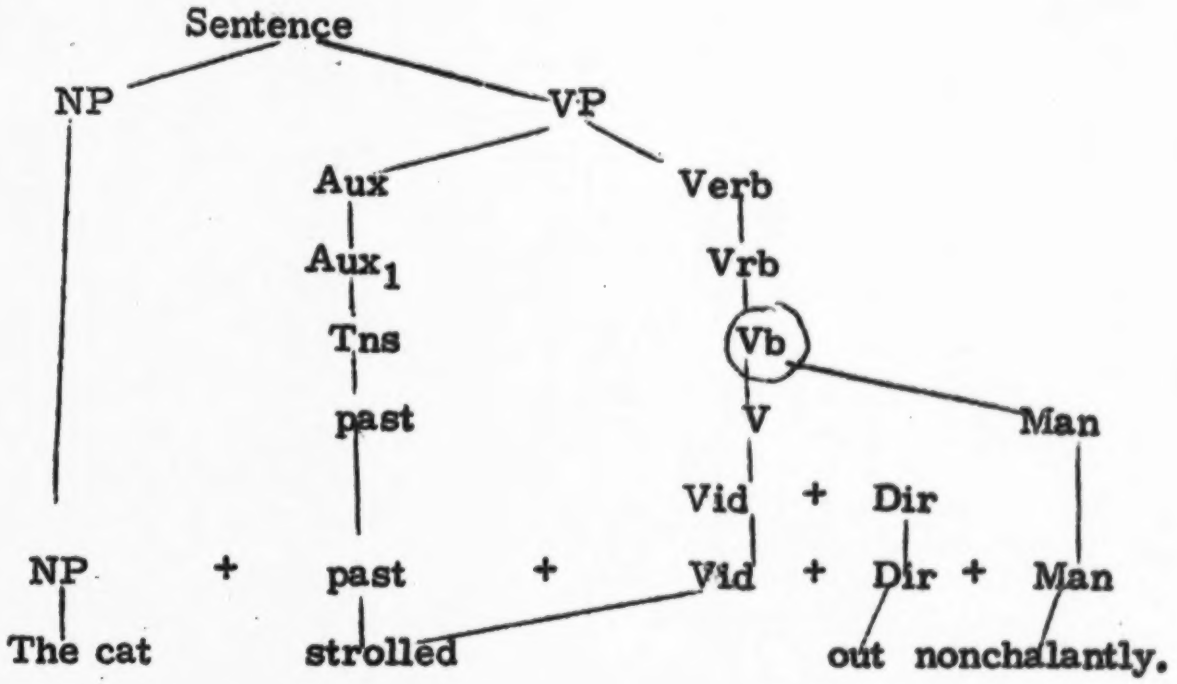




The only way a conjunctive transformation can be performed on the verbs of these sentences is to go back to the common point Vrb and include everything which has come into the sentence below that point. Thus we could write "Roger grew tall and grew corn," but we could not say "Roger grew tall and corn," because the verbs do not derive from the same point in the sentence diagram. Hence tail and corn are not the same kind of constituents.

4.

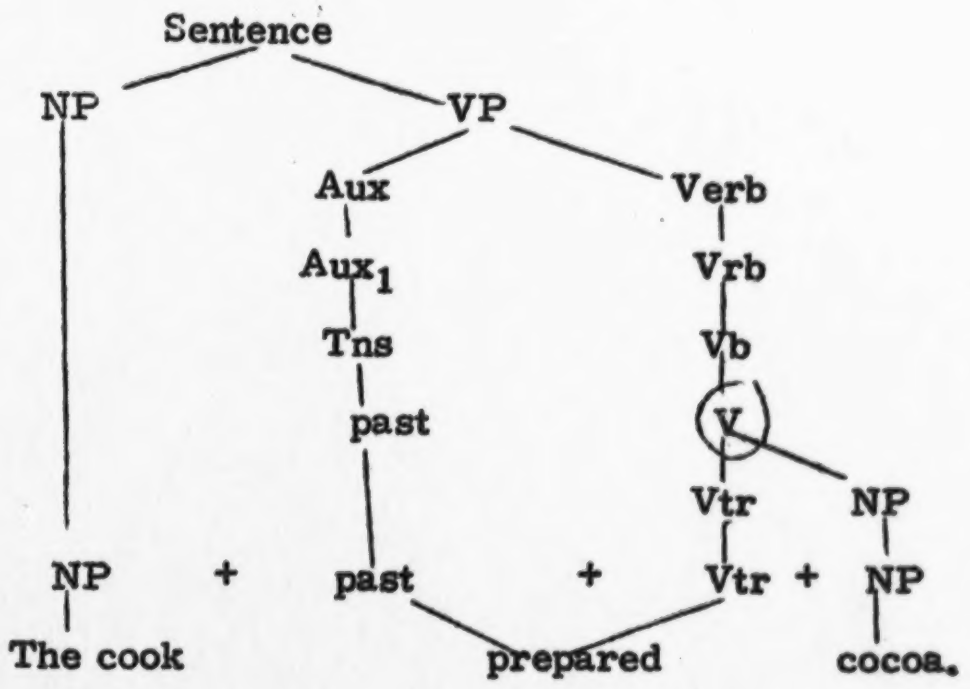


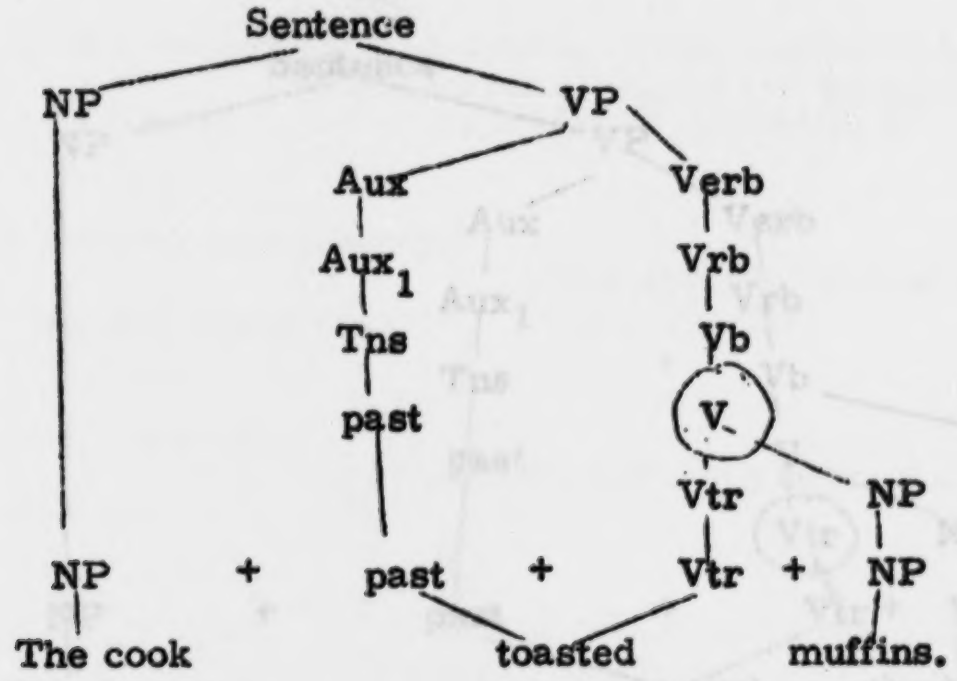


The cat glanced at the canary guiltily and strolled out nonchalantly.

(Because each verb has a different Manner adverb , the common point above the verbs of these sentences is Vb. Everything that comes in below Vb must be included. Some of your students will question calling "glanced at" a verb. This is a special class of transitive verbs which we have not discussed in the grammar up to this point. You can, however, show them that "glance at" is indeed a transitive verb and that the "at" is really part of it by asking them to perform a passive transformation. "The canary was glanced at nonchalantly by the cat." The "at" stays with the verb.)

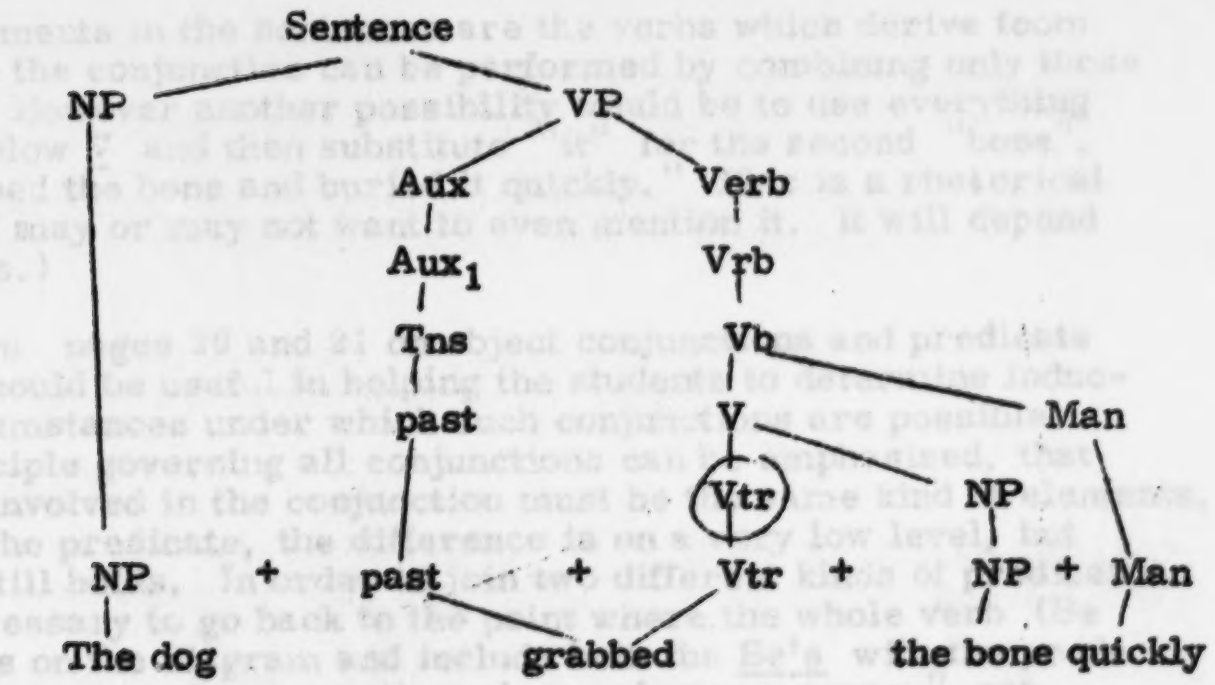
5.

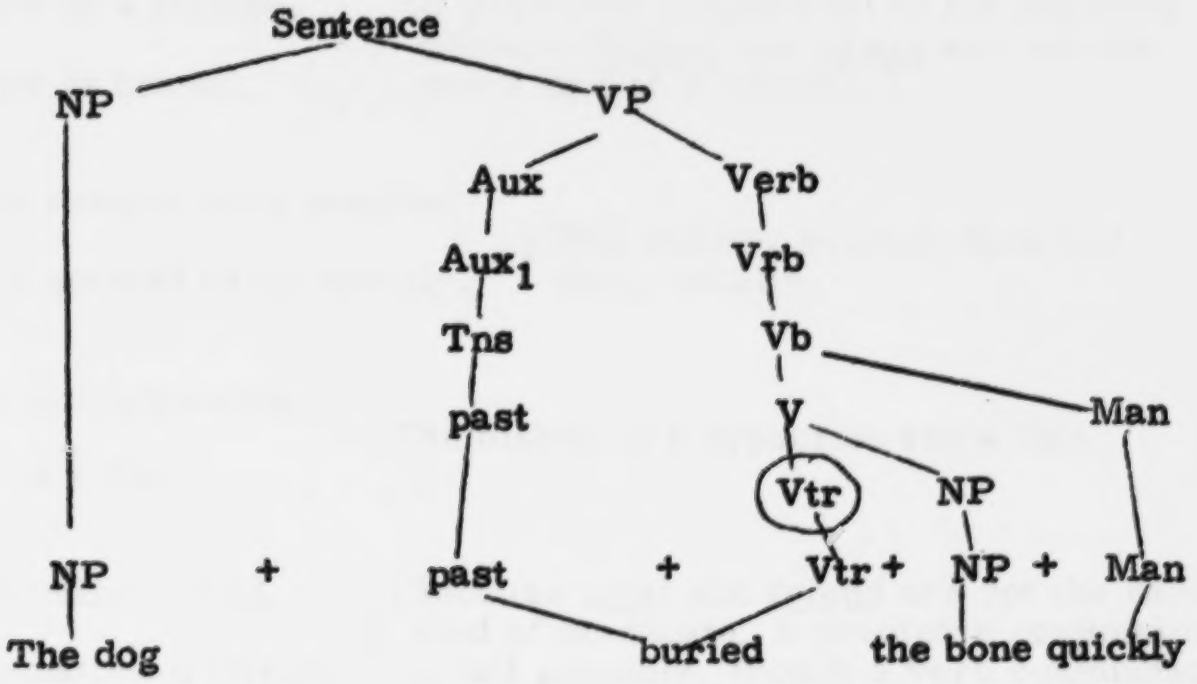




The cook prepared cocoa and toasted muffins.

6.





The dog grabbed and buried the bone quickly.

(The unlike elements in the sentences are the verbs which derive from Vtr; therefore the conjunction can be performed by combining only those two elements. However another possibility would be to use everything that came in below V and then substitute "it" for the second "bone". "The dog grabbed the bone and buried it quickly." This is a rhetorical matter and you may or may not want to even mention it. It will depend upon your class.)

The material on pages 20 and 21 on object conjunctions and predicate conjunctions should be useful in helping the students to determine inductively the circumstances under which such conjunctions are possible. Again the principle governing all conjunctions can be emphasized, that the elements involved in the conjunction must be the same kind of elements. In the case of the predicate, the difference is on a very low level, but the principle still holds. In order to join two different kinds of predicates it would be necessary to go back to the point where the whole verb (Be + Pr) branches on the diagram and include both the Be's with the predicate. "(His sister was always pretty and was always a nurse." not "His sister was always pretty and a nurse.")

Exercise 7: Page 16

1. The child was quiet yesterday.
   The child was thoughtful yesterday. } ⇒ The child was quiet and thoughtful yesterday.
2. Peter became violent.
   Peter became abusive. } ⇒ Peter became violent and abusive.
3. The giant cactus felt rough.
   The giant cactus felt prickly. } ⇒ The giant cactus felt rough and prickly.

4. Our neighbor is a farmer.
   Our neighbor is brave.
   ⇏ (A predicate conjunction is not possible because farmer and brave are not the same kind of predicate.)

5. The hallway seemed dark usually.
   The hallway seemed damp usually.
   ⇒ The hallway seemed dark and damp usually.

6. The bishop is a hypocrite.
   The bishop is a liar.
   ⇒ The bishop is a hypocrite and a liar.

7. Jonathon remained loyal.
   Jonathon remained a friend.
   ⇏ (Because loyal and friend are not the same kind of predicate, a predicate conjunction is not possible, though a verb conjunction would be: "Jonathan remained loyal and remained a friend.")

8. Mice have been in the basement.
   Mice have been in the attic.
   ⇒ Mice have been in the basement and in the attic.

It should be interesting for the students to discover, with the pairs of sentences on page 17, that adverb conjunctions are possible only with adverbs of the same kind.

Pages 17 and 18: Please ask your students to change ACC to Dir. in subheading on page 17 and in the boxed rule, page 18.

Exercise 8: Page 18

1. The rats chewed the woodwork noisily.
   The rats chewed the woodwork diligently.
   ⇒ The rats chewed the woodwork noisily and diligently.

   noisily -- Man
   diligently -- Man

2. Weeds grew in the streets.
   Weeds grew in the yards.
   ⇒ Weeds grew in the streets and in the yards.

   in the streets -- Loc
   in the yards -- Loc

3. The manager will meet me tomorrow.
   The manager will meet me the next day.
   ⇒ The manager will meet me tomorrow or the next day.

tomorrow--Tm
the next day--Tm

4. The children ran to the school.
   The children ran home. } ⟹

The children ran to the school and home.

to the school--Dir
home--Dir

5. The bell rang in the tower.
   The bell rang all night. } ⟹

(A strictly adverb conjunction is not possible because the adverbs are not the same kind. Of course both Tm and Loc can occur in a kernel sentence, but not with a conjunction between them).

in the tower--Loc
all night -- Tm

6. The technician removed the appendix carefully.
   The technician removed the appendix neatly. } ⟹

The technician removed the appendix carefully and neatly.

carefully -- Man
neatly -- Man

Exercise 9: Page 19

A 1. Miss Muffit was eating curds.
   Miss Muffit was eating whey. } ⟹

Miss Muffit was eating curds and whey.

Curds -- Object NP
Whey -- Object NP

(NP^2 would be another possibility for either of these. The important thing is that the student see that both elements are the NP's following Vtr.)

2. The small boy collected Tiger Swallowtails.
   The small boy mounted Tiger Swallowtails. } ⟹

The small boy collected and mounted Tiger Swallowtails.

collected --Vtr
mounted -- Vtr

3. The police followed the trail.
   The police caught the criminal. } ⟹

The police followed the trail and caught the criminal.

followed the trail -- Vtr + NP
caught the criminal -- Vtr + NP

4. Betsy did her work neatly.
   Betsy did her work efficiently. } ⟹

Betsy did her work neatly and efficiently.

neatly -- Man
efficiently -- Man

5. Claude will be Romeo.
   Claude will be Hamlet. } ⟹ Claude will be Romeo and Hamlet.

Romeo -- Pr (NP)
Hamlet -- Pr (NP)

6. My dachsund stays in the house.
   My dachshund stays in the yard. } ⟹

My dachshund stays in the house and in the yard.

in the house -- Loc
in the yard -- Loc

7. The doctor has been in.
   The doctor has been out. The doctor has been in and out.
   in - Loc; out - Loc

B.

1. The injured leg turned black.
   The injured turned blue. } ⟹

The injured leg turned black and blue.
(Simple sentences of this kind should make clear how many of the sentences we use contain compounds which are the results of conjunctions.)

black -- Pr (adj)
blue -- Pr (adj)

2. Our summer house is white.
   Our summer house is yellow. } ⟹ Our summer house is white and yellow.

white -- Pr (adj)
yellow -- Pr (adj)

3. The firetruck roared rapidly down the street.
   The firetruck roared noisily down the street. } ⟹

The firetruck roared rapidly and noisily down the street.

rapidly -- Man
noisily -- Man

4. Geoffrey was a good student in school.
   Geoffrey is a successful lawyer now. ⟹

   Geoffrey was a good student in school and is a successful lawyer now.

   was a good student in school -- VP
   is a successful lawyer now -- VP

   (In order to form a conjunction on this pair one must include the entire VP.)

5. Joe checks the furnace at three o'clock.
   Joe checks the furnace at nine o'clock. ⟹

   Joe checks the furnace at three o'clock and at nine o'clock.

   at three o'clock -- Tm
   at nine o'clock - Tm

   (Actually it is also possible to say "Joe checks the furnace at three o'clock and nine o'clock," but this would involve an explanation of the object of the preposition which hasn't been isolated so far in this grammar. However, such an answer should be accepted.)

6. Otto brought milk to the hospital.
   Otto brought milk to the restaurant. ⟹

   Otto brought milk to the hospital and to the restaurant.

   to the hospital -- Dir
   to the restaurant -- Dir

   (As in no. 5, it is correct to use the preposition only once: "Otto brought milk to the hospital and the restaurant." Some students will probably form the conjunction this way. You might encourage them to try to explain why it is correct.)

7. Jack has worked hard.
   Jack has played hard. ⟹ Jack has worked and played hard. or Jack has worked hard and played hard.

   worked -- V i
   played -- Vi

Review Exercise: Page 20

A. (Please underline Cleopatra in both sentences of 10.)

1. NP + past + Vtr + NP^2

   Susan read the note.

   NP + past + Vtr + NP^2

   Susan destroyed the note.

   ⟹ Susan read and destroyed the note.

2. NP + past + Vtr NP^2

   Willy Mays stole second.

   NP + past $\pm$ Vtr + NP^2

   Willy Mays stole third.

   ⟹ Willy Mays stole second and third.

3. NP + past + Vtr + NP^2

   The Nezperces crossed Idaho.

   NP + past + Vtr + NP^2

   The Nezperces crossed Montana.

   ⟹ The Nezperces crossed Idaho and Montana.

4. NP + past + Vin + Loc

   The clown shuffled out.

   NP + past + Vtr + Loc

   The clown waved at the crowd.

   ⟹ The clown shuffled out and waved at the crowd.

   (The second sentence raises the problem of the preposition which is really part of the verb. In this sentence the "at" is an element that is attached to the verb and is really part of it as can be demonstrated by putting it in the passive. The "at" remains with the verb. Use your own judgment about whether to use this pair of sentences. For the better students it could point ahead to elements we haven't yet discussed.

5. NP + pres + M + Be + Pr (NP)

   The breakfast will be ham.

   NP + pres + M + Be + Pr (NP)

   The breakfast will be eggs.

   ⟹ The breakfast will be ham and eggs. (You should accept Pr, NP, or Pr (NP) for the symbol of the predicate.

6. NP + past + Vtr + NP^2

The bear climbed the mountain.

NP + past + Vtr + NP^2

The bear saw the valley.

⟹ The bear climbed the mountain and saw the valley.

7. NP + past + M + have + en + Vi + Man

The boy should have worked better.

NP + past + M + have + Vlnk + Pr (adj)

The boy should have felt better.

⟹ The boy should have worked better and felt better.

(We can't say "The boy should have worked and felt better," because the two sentences have different kinds of verbs and the <u>better</u> of the first is a manner adverb, whereas the <u>better</u> of the second is a predicate adjective.)

8. NP + past + Vtr + NP^2

John painted the blarney stone.

NP + past + Vtr + NP^2

Bob painted the blarney stone.

⟹ John and Bob painted the blarney stone.

9. NP + pres + Be + Pr (adj)

The committee is large.

NP + pres + M + Be + Pr (adj)

The committee will be efficient.

⟹ The committee is large and will be efficient.

10. NP + pres + have + en + Vi

<u>Cleopatra</u> has come.

NP + pres + have + en + Vi

<u>Cleopatra</u> has gone.

⟹ <u>Cleopatra</u> has come and gone.

B. 1. NP + past + Vlnk + Pr (NP)

Teddy Roosevelt became president.

⟹

NP + past + Vlnk + Pr (NP)

Franklin Roosevelt became president.

Teddy Roosevelt and Franklin Roosevelt became president.

2. NP + past + Vi + Man

The jaguar yawned lazily

NP + past + Vi + Man

The jaguar stretched lazily.

⟹ The jaguar yawned and stretched lazily.

3. NP + past + Vtr + NP^2

Casey swung the bat.

NP + past + Vtr + NP^2

Casey hit a homeruh.

⟹ Casey swung the bat and hit a homerun.

4. NP + past + Vtr + NP^2

The clerk weighed the package.

NP + past + Vmid + NP

The clerk weighed 200 pounds.

⟹ The clerk weighed the package and weighed 200 pounds.

(Though this is a grammatical sentence, it is not one many of us would use, for rhetorical reasons. But it would be absolutely ungrammatical to say "The clerk weighed the package and 200 pounds." because the two NP's follow two different kinds of verbs, and hence can't be combined in a conjunction.)

5. NP + pres + M + have + en + Be + Pr (adj)

The picture must have been quaint.

NP + pres + M + have + en + Be + Pr (adj)

The picture must have been amusing.

⟹

The picture must have been quaint and amusing.

6. NP + past + Vtr + NP^2 + Tm

The company rehearsed The Nutcracker Suite last year.

NP + past + Vtr + NP^2 + Tm

The company presented The Nutcracker Suite last year.

⟹

The company rehearsed and presented <u>The Nutcracker Suite</u> last year.

7. NP + past + Vlnk + Pr (loc)

No one remained in the streets.

NP + past + Vlnk + Pr (loc)

No one remained in the stores.

⟹

No one remained in the streets or in the stores.

8. NP + past + be + ing + Vtr + NP^2

The army was following the Sioux.

NP + past + be + ing + Vtr + NP^2

The army was attacking the Sioux

⟹

The army was following and attacking the Sioux.

9. NP + past + Vlnk + Pr (adj)

The cactus became dry.

NP + past + Vi

The cactus died.

⟹

The cactus became dry and died.

10. NP + past + Vlnk + Pr (NP) + Tm

FDR became president in 1933.

NP + past + Vi + Adverb

FDR served for four terms.

⟹

FDR became president in 1933 and served four terms.

("For four terms" is a special kind of adverb answering the question "how long?" See what your students can do with it.)

An exercise which hasn't been included but which might be interesting would be one in which sentences containing compounds are given to the student and he is asked to write the kernel sentences from which they have derived. Perhaps you will want to work out such an exercise.

For example:

Gerry tripped and fell on the stairs.

from: Gerry tripped on the stairs.
Gerry fell on the stairs.

EMBEDDING TRANSFORMATIONS

Embedding transformations serve to embed one sentence in another, that is, to make one a grammatical part of the other. For example, the sentence

(1) The student who is there is John.

may be understood to be composed of the sentence

(2) The student is John.

and the sentence

(3) The student is there.

embedded in it as a relative clause. In (1) the NP of (3) is understood to have been replaced by who.

In the student version of the second year grammar we introduce only two kinds of embedding transformations, those which ultimately account for the use of adjectives before nouns and those which account for possessive constructions. These will give some indication of the great variety of kinds of embedding possible in our language. We will discuss others in later years.

The first kind of embedding found in the student version embeds sentences like (3), that is, those with the structure NP + Aux + Be + Pr. The transformation which produces (1) by embedding (3) in (2) can be written as the following rule:

(A) $\left.\begin{array}{l}\text{CONSUMER: } \ldots NP_1 \ldots \\ \text{SOURCE: } NP_2 + \text{Aux} + \text{Be} + \text{Pr}\end{array}\right\} \Longrightarrow$

$$\ldots NP_1 + \begin{matrix}\text{Wh} \\ \text{Pr}\end{matrix} + NP_2 + \text{Aux} + \text{Be} + \ldots$$

where NP of the consumer is identical with NP of the source.

The three periods which are found on either side of NP_1 are a conventional way of indicating that content is irrelevant. What the rule says then is that any NP, no matter what context it finds itself in, may have a relative clause attached to it.

The need for the condition that $NP_1 = NP_2$ is intuitively evident. We would not understand (1) to be composed of (2), where NP_1 is the student, and

(4) The garage is there.

where NP_2 is the garage. But for reasons other than intuitional, we want to be sure that a relative clause does not contain a VP which is incompatible with the NP of the consumer sentence to which it is attached. We would not want a VP compatible only with NP's which have been rewritten as Nnon to become attached to the NP of (2) which has been rewritten as Nhum, specifically the student. The way to prevent this is to insist that $NP_1 = NP_2$, since the rules in the Phrase Structure component which would not have allowed an incompatible VP to develop with NP_1 would not have allowed one to develop with NP_2 either.

Notice that the rule (A) stated above adds Wh + to NP_2. The elements

#Don't confuse the sub numerals (NP_1) with the raised numerals used to distinguish subject and object NP's. The sub numerals are used to distinguish identical elements from different sentences.

Wh + NP will be converted automatically to who, which, or that by a later transformation. In (1) Wh + NP_2, where NP $\rightarrow$ Nhum, the student, was developed to who. Wh + Nnon, for example the dog, would become which. Either Wh + Nhum or Wh + Nnon can optionally become that.

The result of (A) may be reduced; for example, the NP and relative clause of (1) may be

(5) The boy there . . .

That is, Wh = NP_2 + Aux + Be may be deleted. The rule is

(B) NP_1 + Wh + NP_2 + Aux + Be + Pr . . . $\Rightarrow$ NP_1 + Pr . . .

Interestingly, in those cases where NP has been rewritten as T + N + N^o and Pr has been rewritten Adj, (B) produces ungrammatical sequences. Where the result of (A) is

(6) The book which is green is mine.

(B) produces

(7) The book green is mine.

Sequences such as (7) are shifted to their proper order by an obligatory transformation. Its form is:

(C) T + N + N^o + Adj $\Longrightarrow$ T + Adj + N + N^o

which changes (7) to

(8) The green book is mine.

The second kind of sentences discussed by the Student Version as a source forembedding is the type of

(9) The man has a friend.

Such sentences are embedded with a view toward deriving possessives like man's from the resulting clauses. That is to say that we understand

(10) The man's friend is unfaithful.

to be derived from

(11) The friend that the man has is unfaithful.

(12) The friend is unfaithful.

with (9) embedded in it.

Since (9) is not of the type of (3), (A) will not apply to embed it. Another rule is thus required. Its form is:

(D) CONSUMER: . . . NP . . .
SOURCE: NP^1 + Aux + have + NP^2

RESULT:
NP_1 + Wh + NP_2 + NP + Aux + have . . .

where NP of the Consumer is identical with NP^2 of the Source.
Its application of (12) as Consumer and (9) as source would produce

(13) The friend that the man has is unfaithful.

In a manner similar to the way in which the NP + relative clause of (1) become (5), the NP + relativ e clause of (13) may become

(14) The friend the man has . . .

The rule for this deletion is:

(E) . . . NP + Wh + NP^2 + NP^1 + Aux + have . . .
. . . NP + NP^1 + Aux + have . . .

Strings such as (14) are the immediate origin of such strings as

(15) The man's friend. . .

which contain possessives. (15) is derived from (14) by the following rule:

(F) . . . T + N + N^0 + NP^1 + Aux + have . . .
. . . . . + NP^1 + 's + N + N^0 . . .

In this rule NP of the consumer has to be rewritten T + N + N^0, to allow for $\overline{NP^1}$ + 's from the source to replace the T.

These two embedding rules (A) and (D) are not formulated as precisely as they should be, either here or in the student version of this unit. For example, there seem to be restrictions on tense which are not accounted for. The following sentences seem ungrammatical:

The bird that sings outside my window was a robin.
The man who is limping down the road was white-haired.
The cold that I have was a nuisance.

until a further context is supplied which seems to "explain" the past tense of the consumer sentence:

The bird that sings outside my window was a robin until the magician transformed him.
The man who is limping down the road was white-haired until he discovered Toni.
The cold that I have was a nuisance until my cousin recommended Vicks.

However, the rules as presently formulated should serve for most of the transformations the students will come up with.

Remember that these rules, unlike the phrase structure rules, are recursive--that is, they can be re-applied endlessly. Once "the pail was empty" is embedded in "the milkmaid carried the pail" to produce "the milkmaid carried the empty pail," there is nothing to prevent embedding "the pail is large" into the transform to produce "the milkmaid carried the large empty pail." Notice that we can also embed "the milkmaid has a pail" into this result and get "the milkmaid carried the milkmaid's large empty pail." If the two milkmaids are the same person, there would have to be an obligatory pronoun replacement to produce "the milkmaid carried her large empty pail."

Pages 22 and 23:
On these pages we are interested in the student understanding: 1) that in this kind of embedding the source sentences are all sentences with Be for the verb and adjectives for the Pr; 2) that every source sentence contains a subject NP which is precisely the same NP as that found in the consumer sentence, though where it is in the consumer sentence does not matter; 3) and that the NP of the source sentence is replaced by who, which or that.

Exercise 1: page 23.

1. The book is red. (which or that)
2. The volcano is dormant. (which or that)
3. The dance is crazy. (which or that)
4. The soap is fragrant. (which or that)
5. The exam was difficult. (which or that)
6. The teacher was unreasonable. (who)
7. The class was unruly. (which or that)
8. The child was talented. (who)
9. The mayor was angry. (who)
10. The team will be victorious. (which or that)
11. The driver had been careless. (who)
12. The boy is shy. (who)

Exercise 2: Page 23.
(Please ask your students to underline the NP of the source sentence and the NP of the consumer sentence which are alike.) You may want to remind your students, also, that it is necessary to change the NP of the source sentence to who, which, or that, before it can be embedded.

A.
1. The milkmaid carried the pail.
   The milkmaid is beautiful. ⟹ The milkmaid who is beautiful carried the pail.

2. The men surveyed the hill.
   The hill is steep. ⟹ The men surveyed the hill which is steep.

3. The boy has a nose.
   The nose is large. ⟹ The boy has a nose which is large.

#4. The bridge spans the stream.
   The bridge is long. ⟹ The bridge which is long spans the stream.

#5. The bridge spans the stream.
   The stream is wide. ⟹ The bridge spans the stream which is wide.

#(4 and 5 point up the fact that the source sentence goes into the consumer immediately after the NP which is like the NP of the source.)

Exercise 3: Page 24

A. (Please ask your students to change became in 3 to pleased. Became might prove a source of argument)

1. The stranger is running away.
   The stranger is tall.
2. The fire was burning the forest.
   The forest was vast.
3. The dress pleased her.
   The dress was red.
4. The war ended.
   The war was long.
#5. The man runs a store
   The man is funny
   The store is little.

#(This may prove a challenge -- and should probably have come in B. It will be interesting to see if your students discover there are two embedded sentences.)

B.

1. We saw the play
   The play was funny.
2. She mended the vase.
   The vase was broken.
3. The rocket carried a mouse.
   The rocket was small.
4. We found a bat.
   The bat was poisonous.
5. The man drove cautiously.
   The man was nervous.

Exercise 4: Page 25.

A. (The purpose of this exercise is to show that Be sentences with predicates which are locatives or NP's can be embedded in the same way as those with adjective Pr's.)

1. The child hit the window. / The child is outside. ⟹ The child who is outside hit the window.
2. The man hires teenagers. / The man is at home. ⟹ The man who is at home hires teenagers.
3. I have a book. / The book is upstairs. ⟹ I have a book which is upstairs.
4. The truck runs badly / The truck is a jeep. ⟹ The truck which is a jeep runs badly.
5. We bought the house. / The house is a mansion. ⟹ We bought the house which is a mansion.
6. The man seems happy. / The man is a father. ⟹ The man who is a father seems happy.

B. (The second sentence in 6 should read Mr. Jones)

1. The kite flew beautifully / The kite is in the tree. ⟹ The kite which is in the tree flew beautifully
2. The cat mewed constantly / The cat is a Siamese. ⟹ The cat which is a Siamese mewed constantly.
3. The woman toured Europe. / The woman is a teacher. ⟹ The woman who is a teacher toured Europe.
4. We met the doctor. / The doctor was here. ⟹ We met the doctor who was here.
5. You must find the basketball. / The basketball is on the patio. ⟹ You must find the basketball which is on the patio.
6. The couselor called Mr. Jones. / Mr. Jones is an expert. ⟹ The counselor called Mr. Jones who is an expert.

C. A. 1. outside -- Loc
2. at home -- Loc
3. upstairs -- Loc
4. jeep -- NP
5. mansion -- NP
6. a father -- NP

B. 1. in the tree -- Loc
2. a Siamese -- NP
3. a teacher -- NP
4. here -- Loc
5. on the patio -- Loc
6. an expert -- NP

Page 26:
Note: To be consistent we should write the symbol Be whenever we are referring to Be as the main verb, in order to distinguish it from be the auxiliary. There are a number of places in this unit where this correction should be made.

Another way to indicate the who, which, or that replacement in the transformation rule on this page is to use the symbol Wh + NP, as we did in the question transformation. Then Wh + NP would become who, which, or what in the sentence string itself.

$$\left.\begin{array}{l} \ldots NP' \ldots \\ NP'' + Aux + Be + Pr \end{array}\right\} \Longrightarrow \ldots NP' + Wh + NP'' + Aux + Be + Pr \ldots$$

If you like you may give this rule to your students instead of the one on p. 26.

Page 27:
There are really two steps involved in the operation described on p. 27. First all of the source sentence except the Adj. is deleted. Then the Adj is placed in front of the noun of the consumer. This operation will be discussed more fully on pp. 32 and 33, but perhaps you can help your students anticipate the rule by asking them what two things are involved.

Exercise 5: Page 27
A.
1. Jane caught a butterfly
The butterfly was a Monarch. ⟹ Jane caught a butterfly which was a Monarch. ⟹ #Jane caught a Monarch butterfly.
#(Monarch is an example of a word ordinarily used as a noun being used as an adjective. This might be a good point to have your class think of other examples.)
2. I am reading a book
The book is exciting. ⟹ I am reading a book which is exciting. ⟹ #I am reading an exciting book.
#(You may want to point out, as you probably have many times before, that the article a becomes an before a vowel.)
3. The author lost the package.
The package was valuable. ⟹ The author lost the package which was valuable. ⟹ The author lost the valuable package.
4. Ink ran on the rug.
The ink is indelible. ⟹ The ink which is indelible ran on the rug. ⟹ The indelible ink ran on the rug.
5. The president was Franklin Roosevelt.
The president was lame. ⟹ The president who was lame was Franklin Roosevelt. ⟹ The lame president was Franklin Roosevelt.

6. Father has the tickets. / The tickets are yellow. ⟹ Father has the tickets which are yellow. / Father has the yellow tickets.

7. The class will graduate tomorrow. / The class is large. ⟹ The class which is large will graduate tomorrow. ⟹ The large class will graduate tomorrow.

8. Frannie had crawled into the cave. / The cave was dark. ⟹ Frannie had crawled into the cave which was dark. ⟹ Frannie had crawled into the dark cave.

B. 1. He threw the wastebasket at the door. / The wastebasket was empty. ⟹ He threw the wastebasket which was empty at the door. ⟹ He threw the empty wastebasket at the door.

#2. Jack climbed the stairs quietly. / The stairs were steep. ⟹ Jack climbed the stairs which were steep quietly. ⟹ Jack climbed the steep stairs quietly.

3. You will be taking the course. / The course is difficult. ⟹ You will be taking the course which is difficult. ⟹ You will be taking the difficult course.

4. Frenchy had seen the moon. / The moon was new. ⟹ Frenchy had seen the moon which was new. ⟹ Frenchy had seen the new moon.

5. The crackers taste strange. / The crackers are stale. ⟹ The crackers which are stale taste strange. ⟹ The stale crackers taste strange.

6. The officers will plan the party. / The officers are experienced. ⟹ The officers who are experienced will plan the party. / The experienced officers will plan the party.

#(Sentences 2 and 7 furnish excellent opportunities to point out connections between rhetoric and grammar. Rhetorically the transformed sentences are very awkward, but they may be improved by means of an optional transformation which permits moving adverbial elements about. Such transformations would give us "Jack quietly climbed the stairs which were steep." and "Every week I have been seeing the dentist who is cheerful.")

7. I have been seeing the dentist every week.
   The dentist is cheerful.
   ⟹ I have been seeing the dentist who is cheerful every week.
   I have been seeing the cheerful dentist every week.

8. He threw the wastebasket at the door.
   The door was open.
   ⟹ He threw the wastebasket at the door which was open.
   He threw the wastebasket at the open door.

Page 28:
The pairs of sentences at the bottom of 28 and top of 29 introduce the embedding of Pr's which are locative adverbs. The transforms which result from embedding the source sentences in the consumer sentences are:

The boy who is outside is big.
The man who is at home hires teenagers.
I have the book which is inside.
I own the car which is under the carport.

With all the words of the embedded source deleted except the Pr's, they become:

The boy outside is big.
The man at home hires teenagers.
I have the book inside.
I own the car under the carport.

Obviously Pr's which are Loc appear right after the noun in the transformed sentence.

Exercise 6: page 29

#1. The coat fits Mary
The coat is in the closet.
⟹ The coat which is in the closet fits Mary. ⟹ The coat in the closet fits Mary.

#(Again it might be well to have your students see that the position of the NP in the consumer sentences does not matter. A source sentence can be embedded after any NP, as long as the subject NP of the source is identical to the NP after which it is embedded.)

2. The alligator needs food.
The alligator is in the bathtub.
⟹ The alligator which is in the bathtub needs food. ⟹ The alligator in the bathtub needs food

3. We visited the shops.
The shops are uptown.
⟹ We visited the shops which are uptown.
#We visited the shops uptown.

#(Two interpretations are possible here. We might think of uptown as an example of a compound word used as an adjective, in which case we would have "We visited the uptown shops." But if it is considered as a locative adverb the transform would be "We visited the shops uptown.")

4. The girl lost her shoe.
   The girl is in front. ⟹ The girl who is in front lost her shoe. ⟹ The girl in front lost her shoe.

5. The city sprayed the trees.
   The trees are in the park. ⟹ The city sprayed the trees which are in the park. ⟹ The city sprayed the trees in the park.

6. The soup smells good.
   The soup is on the stove. ⟹ The soup which is on the stove smells good. ⟹ The soup on the stove smells good.

7. Nancy drew the picture.
   The picture is on the board. ⟹ Nancy drew the picture which is on the board. ⟹ #Nancy drew the picture on the board.

#(Here we have a good example of an ambiguous sentence which can only be clarified by knowing its derivation. If it is the result of embedding a source sentence in a consumer, as here, and then deleting all but the locative element, obviously the sentence is talking about the picture on the board. But this sentence could also be a kernel sentence with the locative element coming in with the verb, in which case we would know that sentence is talking about Nancy drawing on the board. This kind of grammar makes it much easier to clear up the ambiguity than traditional grammar.)

8. The party starts at nine.
   The party is on the patio. ⟹ The party which is on the patio starts at nine. ⟹ The party on the patio starts at nine. . . .

9. The book concerns history.
   The book is on the table. ⟹ The book which is on the table concerns history. ⟹ The book on the table concerns history.

10. He attends the junior high.
    The junior high is on the hill. ⟹ He attends the junior high which is on the hill. ⟹ He attends the junior high on the hill.

Page 30.

And finally we discuss the embedding of Pr's which are noun phrases. Examples are given on this page. The transformed sentences will be:

The truck which is a jeep runs badly.
We bought the house which is a mansion.
The man who is an artist seems happy.
The girl who is a cheerleader went with the team.
The book which is a biography has been lost.

Again you may wish to point out that the position of the NP in the consumer sentence is not important, and also that two steps are involved in the embedding: 1)changing the subject NP of the source to who, which or that, and 2)embedding it in the consumer.

The transformed sentences with all the words except the NP's deleted are:

The truck, a jeep, runs badly.
We bought the house, a mansion.
The man, an artist, seems happy.

The girl, a cheerleader, went with the team.
The book, a biography, has been lost.

Obviously we do not place the embedded NP's before the NP of the consumer. What we have in this embedding, of course, is the appositive. This might be a good point to discuss the use of commas around such constructions.

Exercise 7: page 31

1. George is building the house. / George is a carpenter. ⟹ George who is a carpenter is building the house. ⟹ George, a carpenter, is building the hous

2. The girl will help. / The girl is a secretary. ⟹ The girl who is a secretary will help. ⟹ The girl, a secretary, will help.

3. I invited the man to dinner. / The man is a sergeant. ⟹ I invited the man who is a sergeant to dinner. ⟹ I invited the man, a sergeant, to dinner.

4. He chased the animal around the room. / The animal is a hamster. ⟹ He chased the animal which is a hamster around the room. ⟹ He chased the animal, a hamster, around the room.

5. We had planted the shrubs. / The shrubs are rhododendrons. ⟹ We had planted the shrubs which are rhododendrons. ⟹ We had planted the shrubs, rhododendrons.

6. His father set the bone. / His father is a doctor. ⟹ His father who is a doctor set the bone. ⟹ His father, a doctor, set the bone.

7. The boat won the race last year. / The boat is a schooner. ⟹ The boat which is a schooner won the race last year. ⟹ The boat, a schooner, won the race last year.

8. The play is selling out every night. / The play is a melodrama. ⟹ The play which is a melodrama is selling out every night. ⟹ The play, a melodrama, is selling out every night.

9. The museum bought the picture. / The picture is a Rembrandt. ⟹ The museum bought the picture which is a Rembrandt. ⟹ The museum bought the picture, a Rembrandt.

10. The fault will cause him trouble. / The fault is lying. ⟹ The fault which is lying will cause him trouble. ⟹ The fault, lying, will cause him trouble.

If you have a bright class you may wish to discuss the use of commas around nonrestrictive clauses, but we have not introduced this problem either in the text for the students nor in the Usage Manual for 7th and 8th graders since it is a distinction which is often difficult for many students.

Page 32:
The material on this page deals with the additional step which is necessary when a sentence with an adjective Pr is embedded. Please ask your students to add r at the end of the line P about half way down the page where the first step in the process is symbolized. Hopefully, the students can be led to write the rule inductively.

Exercise 8: page 33
The adverb Pr's are of course locatives and we symbolized them as Loc. You may wish to tell your students to write Loc instead of Adv. Point out the two reminders at the top of p. 34 before the students begin the exercise.

1. The cat purred happily.
   The cat is black.
   ⟹ The cat which is black purred happily. ⟹
   The cat black purred happily. ⟹
   The black cat purred happily. (Adj)

2. Jasper solved the problem.
   Jasper is a genius.
   ⟹ Jasper who is a genius solved the problem. ⟹
   Jasper, a genius, solved the problem. (NP

3. South High lost the game.
   South High is the champion.
   ⟹ South High which is the champion lost the game. ⟹
   South High, the champion, lost the game.

4. The boy had the mumps.
   The boy was absent.
   ⟹ The boy who was absent had the mumps. ⟹
   The boy absent had the mumps. ⟹
   The absent boy had the mumps. (Adj)

5. The bagpipers wore kilts.
   The bagpipers were here.
   ⟹ The bagpipers who were here wore kilts. ⟹
   The bagpipers here wore kilts. (Loc)or (Adv)

6. We painted the bench.
   The bench is in the garden.
   ⟹ We painted the bench which is in the garden. ⟹
   #We painted the bench in the garden. (Loc) or (Adv)

#(This final transform is an ambiguous sentence, which can be explained by its derivation. If, as in this case, the Loc comes in as an embedded Pr, it is then referring to the bench in the garden. But it could, of course, if we didn't know this, be thought of as a kernel sentence with the Loc coming in with the verb paint. In that event, it would refer to painting in the garden. In the latter the ambiguity could be cleared up by a rhetorical shifting of the locative element to the beginning of the sentence: "In the garden we painted the bench." You may like to have this explanation handy for the bright student who might question this sentence.

7. We heard the sirens. } ⟹ We heard the sirens which are loud. ⟹
The sirens are loud. } We heard the sirens loud. ⟹
We heard the loud sirens. (Adj)

8. The walls tumbled down. } ⟹ The walls which were weak tumbled down. ⟹
The walls were weak. } The walls weak tumbled down. ⟹
The weak walls tumbled down. (Adj)

9. The boy shouted gleefully. } ⟹ The boy who was happy shouted gleefully. ⟹
The boy was happy. } The boy happy shouted gleefully. ⟹
The happy boy shouted gleefully. (Adj)

10. My love gave a partridge. } ⟹ My love gave a partridge which is in
The partridge is in a pear tree } a pear tree. ⟹
My love gave a partridge in a pear
tree. (Loc) or (Adv)

EMBEDDING HAVE SENTENCES

Page 35:
Please ask your students to substitute groups for pairs in the first line of the text after the examples, and also in the 3rd line. Substitute group for pair in the fourth line. In the first line of the second paragraph ask them to cross out "following each pair." In the last sentence of the paragraph ask them to underline Hardtop and friend and cross out the quotes around Hardtop.

The important thing for students to see here is that the object NP is the word that is replaced, that the whom, which, or that then moves to the front of the sentence, and then the embedding takes place.

C: The hardtop is green. } ⟹
S: The car has a hardtop.
T: The hardtop which the car has is green.

C: The assignment seems long. } ⟹
S: The student has an assignment.
T: The assignment which the student has seems long.

C: Tom called the friend. } ⟹
S: The girl has a friend.
T: Tom called the friend whom the girl has.

C: Mary knows the secret. } ⟹
S: The boy has the secret.
T: Mary knows the secret which the boy has.

C: Rod wrote the song. } ⟹
S: The school has a song.
T: Rod wrote the song which the school has.

The who-whom usage problem can be discussed here. Discuss the fact that this is a distinction that is disappearing in informal English.

Exercise 1: page 35

The point of this exercise is to give practice in replacing the object NP and then moving it to the front of the sentence.

1. The announcer has the script. ⟹
   The announcer has which (or that) ⟹
   which (or that) the announcer has

2. The cat has whiskers. ⟹
   The whiskers which (or that) ⟹
   which (or that) the cat has

3. A man has a home. ⟹
   A man has which (or that) ⟹
   which (or that) a man has

4. The boy has a father. ⟹
   The boy has whom (or that) ⟹
   whom the boy has

5. The team has the trophy. ⟹
   The team has which (or that)
   which (or that) the team has

6. I have a friend. ⟹
   I have whom (or that) ⟹
   whom I have

7. The boat has a sail. ⟹
   The boat has which (or that) ⟹
   which (or that) the boat has

8. The class has a captain. ⟹
   The class has whom (or that) ⟹
   whom (or that) the class has

9. Jeanette has a doctor. ⟹
   Jeanette has whom (or that) ⟹
   whom (or that) Jeanette has

10. Cindy has a smile. ⟹
    Cindy has which (or that) ⟹
    which (or that) Cindy has

Exercise 4, Pages 33-37

Such sentences would probably never be changed to the possessive form, because there would be rhetorical and semantic reasons for leaving them as they are. It is important to remember, and perhaps to tell your students, that like so many kernel sentences, these would not be used in real life, but it is important to identify them as the basic sentences which underlie our real-life sentences.

A. 1. He got the part.
I have the part. ⟹ He got the part which (or that) I have.

2. That job was excellent.
The man has the job. ⟹ The job which (or that) the man has was excellent.

3. The trouble was annoying.
The teacher had trouble. ⟹ The trouble which (or that) the teacher had was annoying.

4. Nobody likes the sister.
The boys have a sister. ⟹ Nobody likes the sister whom (or that) the boys have.

5. The daughter is in Athens.
The president has a daughter. ⟹ The daughter whom (or that) the president has is in Athens.

6. We will go to the party.
Mary has a party. ⟹ We will go to the party which (or that) Mary has.

7. We have called the doctor.
The company has a doctor. ⟹ We have called the doctor whom (or that) the company has.

8. The father met the teacher.
The boy has a teacher. ⟹ The father met the teacher whom (or that) the boy has.

B. 1. The class will be doing the assignment.
They have an assignment. ⟹ The class will be doing the assignment which (or that) they have.

2. Jeremy has lost the combination.
He has a combination. ⟹ Jeremy has lost the combination which (or that) he has.

3. We like the friend.
Mary has a friend. ⟹ We like the friend whom (or that) Mary has.

4. The shoes hurt.
Fred has the shoes. ⟹ The shoes which (or that) Fred has hurt.

5. The gardner had stolen the money.
The Moores have a gardner. ⟹ The gardner whom (or that) the Moores have had stolen the money.

6. The bat had a gallstone.
John had a bat. ⟹ The bat which (or that) John has had a gallstone.

7. He wrecked the car. } ⟹ He wrecked the car which (or that) father has.
   Father has a car.

8. We had recognized the twin. } ⟹ We had recognized the twin whom (or that) Paul has.
   Paul has a twin.

Page 38:
The examples on this page show that the whom, which or that can be eliminate
Students should change Tom to Rod in the last sentence in the examples before
Exercise 3.

Exercise 3: page 38
Remember that whom and which can also be that.

A. 1. Ned hit the rooster. } ⟹ Ned hit the rooster which the farmer has. ⟹
   The farmer has a rooster.
   Ned hit the rooster the farmer has.

2. The wallet must have fallen in the lake. } ⟹ The wallet which Gordon has must have fallen in the lake. ⟹
   Gordon has a wallet.
   The wallet Gordon has must have fallen in the lake.

3. The plane is landing in Portland. } ⟹ The plane which the president has is landing in Portland. ⟹
   The president has a plane.
   The plane the president has is landing in Portland.

4. The quarterback carried the ball. } ⟹ The quarterback that South has carried the ball. ⟹
   South has a quarterback.
   The quarterback South has carried the ball.

5. The aunt is an actress. } ⟹ The aunt whom Georgia has is an actress. ⟹
   Georgia has an aunt.
   The aunt Georgia has is an actress.

6. The subscription will expire. } ⟹ The subscription which I have will expire. ⟹
   I have a subscription.
   The subscription I have will expire.

B. 1. The dog buried the bone the cook has.
   from: The dog buried the bone which the cook has.
   from: The dog buried the bone.
   The cook has a bone.

2. The propeller the plane has fell off.
   from: The propeller which the plane has fell off.
   from: The propeller fell off.
   The plane has a propeller.

3. The mouse John has was spotted.
   from: The mouse that John has was spotted.
   from: The mouse was spotted.
   John has a mouse.

4. The glasses the man has are on his nose.
   from: The glasses which the man has are on his nose.
   from: The glasses are on his nose.
   The man has the glasses.

5. The agent the actor has will come tomorrow.
   from: The agent whom the actor has will come tomorrow.
   from: The agent will come tomorrow.
   The actor has an agent.

6. The shell the turtle has is exterior.
   from: The shell which the turtle has is exterior.
   from: The shell is exterior.
   The turtle has a shell.

Page 39-40

On these pages we arrive at the goal to which all the material has been leading--the explanation of the possessive form in English.

Try to get your students to identify the steps involved in the change from "The job the man had was excellent." to "The man's job was excellent." before they read them on page 40.

Please have your students correct the first line of the symbolized transformation at the bottom of p. 40 to read

$$\ldots T + N + N^{o} + \underline{NP^{s}} + Aux + have \ldots$$

Exercise 4: Page 40

A.	B.	A.	B.	A.	B.
men	men's	books	books'	trainers	trainers'
women	women's	fish	fish's	voters	voters'
children	children's	foxes	foxes'	mink(s)	mink's (minks')
cars	cars'				
dogs	dogs'	babies	babies'	butterflies	butterflies
trees	trees'	grandfathers	grandfathers'	cooks	cooks'
teachers	teachers'	uncles	uncles'	typists	typists'
singers	singers'	terriers	terriers'	skiers	skiers'
mailmen	mailmen's	mice	mice's	lice	lice's
		stars	stars'	ponies	ponies'

Page 41:

There is much about pronouns which we have not discussed in the 7th and 8th grade grammar, because they present very complicated problems. They will be treated more fully in later years. However, the discussion of the possessive does seem to be an opportune moment to point out the special form the personal pronouns take in the possessive.

When you have your students write the rule for this particular embedding, you may want to use the symbol $\underline{\text{Wh-NP}^{2}}$ instead of NP + $\left\{\begin{matrix}\text{whom or which}\\ \text{that}\end{matrix}\right\}$ as we did in the question transformations and as we suggested doing in the adjective embedding. This will depend on the teacher and the class, and is optional at this point. Linguists do, however, use the Wh-NP symbol.

Note: The braces should be drawn in more clearly at the bottom of the page.

Page 42:
In the boxed rule on this page there should be a brace before the first double arrow to show that two kernel sentences are involved. Writing the rule for this transformation in linguistic symbols may prove very complicated for some students. If it seems too difficult, that part may be eliminated, because it is possible to see what happens in the transformation in a fairly accurate way simply by looking at the sentences themselves.

Exercise 5: Page 42
Parts C and D should perhaps be used only for advanced classes.

A.

1. The phone book is large.
   Eugene has a phone book.
   ⟹ The phone book which Eugene has is large. ⟹
   The phone book Eugene has is large. ⟹
   Eugene's phone book is large.

2. The lunchroom is crowded.
   Roosevelt School has a lunchroom.
   ⟹ The lunchroom which Roosevelt School has is crowded. ⟹
   The lunchroom Roosevelt School has is crowded. ⟹
   Roosevelt School's lunchroom is crowded.

3. The gun shoots accurately.
   The man has a gun.
   ⟹ The gun which the man has shoots accurately. ⟹
   The gun the man has shoots accurately. ⟹
   The man's gun shoots accurately.

4. They learned the motto.
   The Girl Scouts have a motto.
   ⟹ They learned the motto which the Girl Scouts have. ⟹
   They learned the motto the Girls Scouts have. ⟹
   They learned the Girl Scouts' motto.

5. We admire the teacher.
   We have a teacher.
   ⟹ We admire the teacher whom we have. ⟹
   We admire the teacher we have. ⟹
   We admire our teacher.

6. Mary rode the horse.
   Jack has a horse.
   ⟹ Mary rode the horse which Jack has. ⟹
   Mary rode the horse Jack has. ⟹
   Mary rode Jack's horse.

7. Thieves stole the tricycle.
   The child has a tricycle.
   ⟹ Thieves stole the tricycle which the child has. ⟹
   Thieves stole the tricycle the child has. ⟹
   Thieves stole the child's tricycle.

8. The sprain was severe.
   The halfback has a sprain.
   ⟹ The sprain which the halfback has was severe. ⟹
   The sprain the halfback has was severe. ⟹
   The halfback's sprain was severe.

9. The man saw the fish. ⟹ The man saw the fish which the bear has. ⟹
   The bear has a fish. ⟹ The man saw the fish the bear has. ⟹
   The man saw the bear's fish.

10. The party lasted three hours. ⟹ The party which the class had lasted three hours. ⟹
    The class had a party. ⟹ The party the class had lasted three hours. ⟹
    The class's party lasted three hours.

B.

1. The car's top is black.
   from: The top the car has is black.
   from: The top is black.
   The car has a top.

2. The boy found the chipmunk's nest in the tree.
   from: The boy found the nest the chipmunk has in the tree.
   from: The boy found the nest which the chipmunk has in the tr
   #from: The boy found the nest in the tree.
   The chipmunk has a nest.
   # The kernels could also be: The boy found the nest.
   The chipmunk has a nest in the tree.
   Accept either, and for your bright students you may wish to talk about the ambiguity.

3. The student's record is excellent.
   from: The record the student has is excellent.
   from: The record which the student has is excellent.
   from: The record is excellent.
   The student has a record.

4. Ted has brought the cat's cage.
   from: Ted has brought the cage the cat has.
   from: Ted has brought the cage which the cat has.
   from: Ted has brought the cage.
   The cat has a cage.

5. He accepted his responsibility reluctantly.
   from: He accepted the responsibility he has reluctantly.
   from: He accepted the responsibility which he has reluctantly.
   from: He accepted the responsibility reluctantly.
   He has the responsibility.

6. The pupils admired their teacher.
   from: The pupils admired the teacher they have.
   from: The pupils admired the teacher whom they have.
   from: The pupils admired the teacher.
   They have a teacher.

7. The cheerleaders' uniforms will be arriving tomorrow.
   from: The uniforms the cheerleaders have will be arriving tomorrow
   The uniforms which the cheerleaders have will be arriving tomorrow.
   from: The uniforms will be arriving tomorrow.
   The cheerleaders have the uniforms.

8. I must have been puzzling my friends.
   from: I must have been puzzling the friends I have.
   from: I must have been puzzling the friends which I have.
   from: I must have been puzzling the friends.
   I have friends.

9. George's costume will be hilarious.
   from: The costume George has will be hilarious.
   from: The costume which George has will be hilarious.
   from: The costume will be hilarious.
   George has a costume.

10. Bill has been visiting Jane's cousin.
   from: Bill has been visiting the cousin Jane has.
   from: Bill has been visiting the cousin whom Jane has.
   from: Bill has been visiting the cousin.
   Jane has a cousin.

C. The example has $\underline{N^0}$ instead of sing, but you may want to ask your students to use sing and plur since it would probably be a good review for them to write fairly refined symbol strings (that is terminal strings) for this exercise, with the exception of the $\underline{NP^s}$. Perhaps using this symbol will reenforce the notion that the possessive comes from the source sentence.

1. NP^s + s + N + sing + pres + Be + Adj
   The car's top is black.

2. T + N + sing + past + Vtr + NP^s + s + N + sing + Loc
   The boy found the chipmunk's nest in the tree.

3. NP^s + s + N + sing + pres + Be + Adj
   The student's record is excellent.

4. T + N + sing + pres + have + en + Vtr + NP^s + s + N + sing
   Ted has brought the cat's cage.

5. T + N + sing + past + Vtr + NP^s + s + N + sing + Man (or Adj + ly)
   ∅ He accepted his responsibility reluctantly.

6. T + N + plur + past + Vtr + NP^s + s + N + sing

The pupils admired their teacher.

7. NP^s + s + N + plur + pres + M + be + ing + VI + Tm

The cheerleader's uniforms will be arriving tomorrow.

8. T + N + N^o + pres + M + have + en + be + ing + Vtr + NP^s + s + N + plur

Ø I must have been puzzling my friends.

9. NP^s + s + N + sing + pres + M + Be + Adj

George's costume will be hilarious.

10. T + N + N^o + pres + have + en + be + ing + Vtr + NP^s + s + N + sing

Bill has been visiting Jane's cousin.

D. The object of this exercise is to apply the symbolized rule to the indicated sentences. Therefore, it is necessary to write symbols for only those parts of the sentences involved in the transformation. It is not necessary to write terminal strings as in C. See the example on p. 43. You may wish to work this exercise out with your students.

1. . . . NP . . .

The phone book is large

NP Aux + has + NP^2

Eugene has a phone book ⟹

. . . NP + which + NP^s + Aux + have . . .

The phone book which Eugene has is large. ⟹

. . . NP + NP^s + Aux + have . . .

The phone book Eugene has is large. ⟹

NP^s + s + N + N^o . . .

Eugene's phonebook is large.

3. . . . NP . . .

The gun shoots accurately.

NP + Aux + have + NP^2

The man has a gun

. . . NP + which + NP^s + Aux + have . . .

The gun which the man has shoots accurately. ⟹

. . . NP + NP^s + Aux + have . . .

The gun the man has shoots accurately. ⟹

NP^s + s + N + N^o . . .

The man's gun shoots accurately.

5. . . . NP . . .

We admired the teacher

NP + Aux + have + NP^2

We have a teacher

. . . NP + whom + NP^s + Aux + have

We admired the teacher whom we have ⟹

. . . NP + NP^s + Aux + have

We admired the teacher we have ⟹

. . . NP^s + s + N + N^o . . .

We admired our teacher.

9. . . . NP . . .

The man saw the fish

NP + Aux + have + NP^2

The bear has a fish ⟹

. . . NP + which + NP^s + Aux + have

The man saw the fish which the bear has ⟹

. . . NP + NP^s + Aux + have

The man saw the fish the bear has. ⟹

. . . NP^s + s + N + N^o . . .

The man saw the bear's fish.